PULP & PAPER

JUNE 1955

"Average size" mills must expand and modernize, Kimberly-Clark Corp., Whiting-Plover Paper Co., virtually an island in mid-Wisconsin, is one of many that surround it... see page 72

a little *acts* **BIG** *with*

LIQUID CYFOR®

FORTIFIED ROSIN SIZE

You use less size—30% to 40% less—when you use CYFOR Rosin Size in place of ordinary size. So—

You save money—
CYFOR goes lots farther than ordinary size. Its results are more uniform, too.

You up quality—
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Recent Mill Developments with Cyanamid Paper Chemicals

Uniform paper coating has been attained with the use of CYNOL® 770 Defoamer by an eastern mill. The CYNOL is used in a clay-talc coating containing a resin binder to prevent air entrainment which would cause craters in the coating when the air bubbles break.

• • •

Excellent save-all operation with unsized papers has been reported by several mills using ACCOBRITE® Size and alum. The ready solubility and high brightness of ACCOBRITE result in the most efficient save-all operation.

• • •

Elimination of sticking is credited to ALWAX® 253-A Size in coating formulations. At a mill using 1% of wax solids with starch in machine coating color, ALWAX 253-A eliminated sticking—after dampening the sheet—on the super calender. The run was made on a bread wrap and later reports from the converting plant showed the sheet was satisfactory in every respect, including printability.

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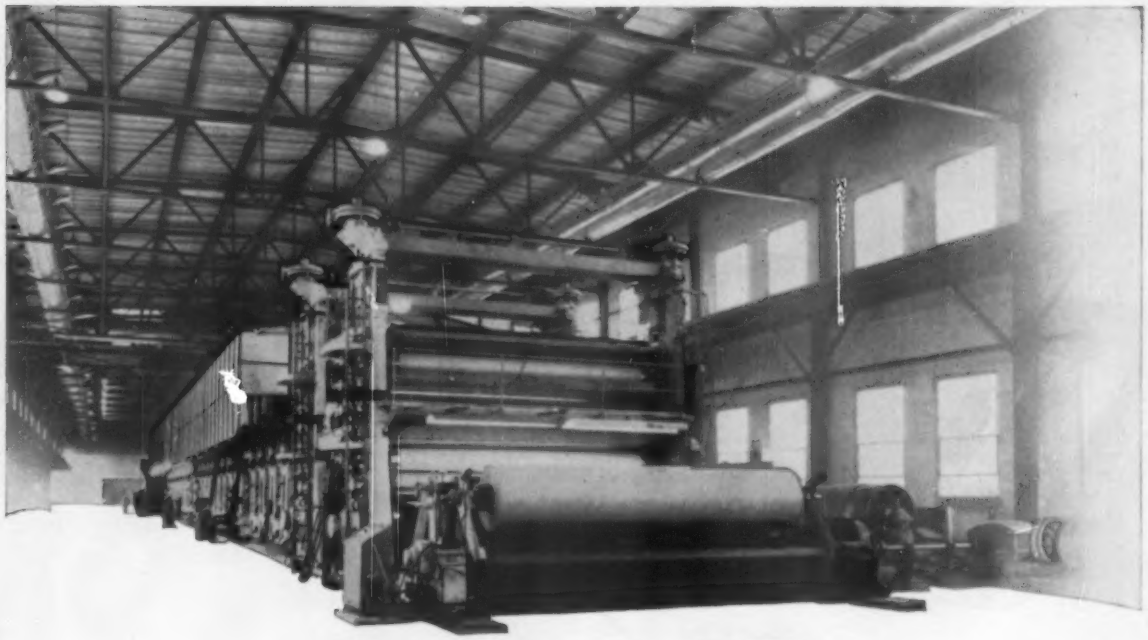

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PULP & PAPER

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MILLER FREEMAN PUBLICATIONS

IN THIS ISSUE

PULP & PAPER EDITORIAL PAGE

How Taxes Force Bad Cutting

Forest owners, conservationist groups, tax specialists and professional foresters display increasing uneasiness over tax inequities tending to force timber crops from the land. These people are disturbed by taxation placing economic strangulation on the growing of forest crops.

One chapter of Society of American Foresters, after intensive studies of the forest tax problems, came out with the thesis "that it is as much in the public interest to protect forest lands and timber from destructive taxation as it is to protect our forests from fire, insects, disease, or destructive cutting." A member of the study group points out that farmers' agricultural crops are not taxed—just the land, and that in accordance with its ability to produce. Why not tax forest lands on the same basis?

Classifying forest lands by site class could be readily accomplished for the tax record. Furthermore the classification, except for unusually heavy or repeated burning, would normally remain unchanged over a long period of years and thus eliminate the conventional frequent reappraisal. A more pertinent effect would be the encouragement for growing tree crops—the primary use for which forest land is adapted.

A Ton of Paper Per Family

Do you know that today an American family of five uses one ton of paper?

That per capita consumption increased from 6½ lbs. in 1872 to 70 lbs. in 1905, to 400 lbs. today?

Kimberly-Clark Corp. recently built a picture story for its company magaizne around the family of five, showing them with a ton of various kinds of paper.

Here is a paragraph from that story, which shows why the pulp and paper industry is now the 4th industry of U.S.A., as President Leslie of APPA recently said, and why it may soon be the first:

"Paper can be thick or thin, tough and strong, soft and fluffy. It can be one or all colors and of varying textures. Paper can be cut, molded, nailed, folded, stretched and glued. And, paper can replace tin, wood, glass, cloth and steel. Once used, its comparative low cost permits its disposal and that is the reason we can say, 'America's standard of living can be measured by the wastebasket full.'"

Welfare of 488 Towns at Stake

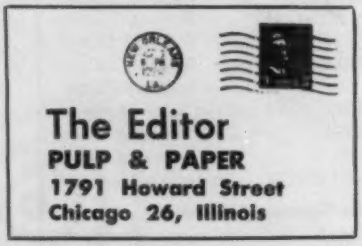
"There are some 644 mills in 488 communities in the United States pulp and paper industry; 160 of these communities are over 50% dependent upon the industry. Around 270,000 are employed directly and have over a million dependents.

"The welfare of these communities and the employes and their dependents is a matter of great public concern. Certainly it justifies mutual understanding and mutual action if the general public welfare is not to suffer."—E. W. Tinker, executive secretary, APPA, addressing Ohio industry community relations committee.

Here are a few national problems which may acutely affect these 488 cities and towns:

Recent extension of reciprocal trade agreements; proposals before Congress to regulate chemical additives in food and food packaging; the proposed new lending agency—the International Finance Corp.; eight specific legislative proposals affecting national forestry policy and development of water and power resources.

It behooves employes and their dependents in these 488 communities to acquaint themselves fully with these and other similar measures and their effect on their welfare.



READERS CORNER

No anonymous letters will be considered but names may be withheld if desired.

"Useful Information"

I thought you would be interested in knowing that several times during the past few months I have had occasion to refer to your WORLD REVIEW NUMBER, 1954. This volume certainly contains a great deal of useful information and I have certainly made good use of it.

NEIL E. NASH, Vice Pres. and Secy.
Nekoosa-Edwards Paper Co., Port Edwards, Wis.

"Very Creditable Job"

One of the highlights of a recent trip in the South was when Mr. Roy V. Weldon, our executive vice president, forwarded me the first copy of the April issue of PULP & PAPER, which featured our expansion program.

I think this was a very creditable job, well done. I feel very proud of our team up here and I am glad that you also have been impressed by their success.

M. C. McDONALD
President, Great Northern Paper Co.

"One of the Finest"

I had the opportunity to go over the April issue of PULP & PAPER with the four-color picture of our East Millinocket mill and the story of our expansion at some leisure, over the week end, and it is one of the finest.

ROY V. WELDON
Executive Vice President, Great Northern Paper Co.

"Excellently Prepared Article"

We wish to compliment you on the excellently prepared article concerning the Great Northern expansion which appeared in the April issue of PULP & PAPER. We have had much favorable comment from many sources, including our own officials.

W. F. DANIELL
Manager of Engineering, Great Northern Paper Co.

"World Review Is Major Event"

Your Annual World Review Number's yearly appearance is a major event for those who are interested in pulp and paper matters the whole world over.

P. SARTORIUS
Acting Chief, Forestry Working Group
Food and Agriculture Organization of the United Nations
Palace of the Nations, Geneva, Switzerland

STRICTLY PERSONAL

SOUTHERN NEWS

Perry Tours Deep South; Papermen Cruise 300 Miles; Youngchilds In New Home

HENRY PERRY, who heads sales for Lockport Felt, recently met **PAUL EASTON**, of (6 Nelson Lane) Pass Christian, Miss., Lockport's Deep South rep, for Mr. Perry's first tour of that territory in his new capacity. Paul and Thelma Easton and their family have a new future home site in a heavily wooded grove in Pass Christian.

KEN and **JERRY YOUNGCHILD**, (he is Southern mgr. for American Cyanamid paper chemicals) have moved to an attractive new home at 155 Rochester Road, Spring Hill, Ala. (Mobile suburb), just a block from their former home there. Their phone is Greenwood 7-7359.

FRED SCHELHORN, mill mgr., and **RAY McCORMACK**, paper mill supt., National Container, Jackson, helped **JACK CHANDLER**, Hank D. Jones Co., pilot his new 25 ft. cruiser from Miami, where he bought it, some 300 miles to his home, Atlantic Beach, Fla.

EDMUND C. PACA is new Albany Felt sales engineer in the South Central area, covering 7 states formerly toured by **RAY DUSTRUDE**, now asst. sales mgr. with headquarters in Albany, N.Y. Mr. Paca graduated from Miami of Ohio and American Institute of Foreign Trade.

Together Again in "Jax"

JOHN A. McDERMOTT (left), has been made Supervisor of all St. Regis Paper Mills, but he continues also as Mill Mgr., Jacksonville, where a second big machine is being added. JOHN M. VICTOR (right), new General Supt. at Jacksonville, where he moved from Tacoma, Wash. The two "Johns" were formerly together at Tacoma and before that in St. Regis New York operations—and many times have been together in a fishing boat.

KIRK SUTLIVE, public relation mgr, Union Bag & Paper, Savannah, saw his son, William D., graduate from U. of Georgia School of Medicine in June. He will intern in Baltimore.

GEORGE (WHITEY) ENGERT, former Southern industry pulp and paper executive, is now operating a motel near Jacksonville.

HERE'S CHIT-CHAT ABOUT SOUTHERNERS—Real "Rebels" and Yankee Expatriates but Industry Friends, All!
Originally gathered by P & P Editors, and published nowhere else!

A. P. YUNDT, Camp Mfg., **JAMES L. BAKER**, Albemarle Paper Mfg., **HUBERT FOSTER**, Champion in Texas, and **R. M. THIBADEAU**, of Burgess Piment Co., are Southerners who are spending three weeks this summer in Kalamazoo taking the Western Michigan College coated paper manufacturing course.

HARRY TAYLOR, chief chemist, Rayonier, Fernandina, and wife, Jo-Ann, have new son, born in March.

DICK HENDERSON has been promoted to relief shift superintendent at Rayonier, Fernandina.

Ask **JOHN L. McCULLOUGH**, board mill supt., Southland Paper Mills, to tell his new hunting story. Two does wandered within 30 ft. of his blind, but he waited for the buck. Then a mob of squirrels suddenly set up a chatter. He held his fire, but a squirrel hunter didn't. The buck deer escaped, almost trampling Dick, but concealed by understory.

ERNEST MESSER, Champion woodlands supt., Canton, N.C., represented Canton Toastmasters in a state contest. **J. E. WILKINSON**, asst. plant engineer, was Canton runner-up.

HOWARD W. STEPHEN is the new pulp mill supt. at National Container Corp. of Virginia semi-chemical pulp and paper mill at Big Island, Va.

LES KAPP, electrical supt. at St. Regis, Jacksonville, was born in Oxford, O., and served in the first world war with the air force in France. He was 18 years with Champion before he went to Pensacola as asst. electrical supt.

One Goes North; Other, South

ROHE V. PENNINGTON (left), former Plant Engineer at National Container's Jacksonville, Fla., mill, has joined the new Condi Engineering Corp., recently formed and headed by Leonard Durant to design and sell continuous digesters. It is located at 73 North St., Pittsfield, Mass.

EDMUND C. PACA (right) is new Sales Engineer for Albany Felt Co. in South Central area, according to WAYNE G. DAVIS, Vice President in Charge of Felt Sales. He will handle seven states formerly covered by RAY DUSTRUDE, now Asst. Sales Mgr. in Albany.

LUCIAN and **MARIE WHITTLE** (he is woodland div. mgr., Brunswick P & P) recently returned from a Jamaica-Haiti-Cuba vacation, bringing back some Haitian records to remember it by.

EDWARD P. WOOD, manager of the Scott H & W Division at Mobile, and his wife have picked out a new home in the popular Daphne district on the Gulf Coast southeast of Mobile. They formerly lived in Spring Hill.

GERALD HAYWOOD is tech. asst. to the director of tech. research and development, West Virginia P & P, Luke, Md.

GEORGE SEVIOUR, formerly with Canadian Resins & Chemicals Ltd., is mechanical engineer for West Virginia at Charleston, S.C.

A. M. (MIKE) KOURY, industrial-community relations mgr., Champion's Texas Division, is new member of the Texas Mfrs. Assn., Houston industrial relations committee.

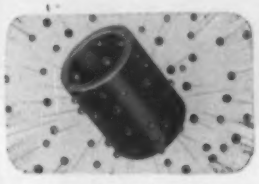
ROBERT F. BROWN is new sales representative for Stanley Steel Strapping Div., in east Tennessee, north Alabama and South Georgia, with headquarters at Chattanooga, Tenn. Mr. Brown is a native of Douglasville, Ga. He served in the navy in the war, later in the army, leaving as captain.

Continued on page 10

In roller chain . . . EXTRAS* like these give you extra reliability

LOCK-TYPE BUSHINGS (applied on a range of sizes) end a cause of stiff chain.

PRE-STRESSING of multiple width chain provides uniform load distribution.



SHOT-PEENED ROLLERS have greater fatigue life, added ability to withstand impact.

CLOSER HEAT-TREAT CONTROL — coupled with rigid testing insures uniformity.

*And you pay no premium for these LINK-BELT extras

BIG reason why Link-Belt Precision Steel Roller Chain is first choice for so many tough jobs is that it has *extra reliability built-in.* For example, pre-stressing smooths out any irregularities of multiple width chain *in advance.* And it's just one of many *extras* you get as *standard* from Link-Belt. Check the three others shown here. Then call the Link-Belt office or authorized stock carrying distributor near you for facts on Link-Belt's complete range of roller chain and sprockets. Data Book 2457 gives full information on single and multiple widths, in ¼" to 3" pitch, 1" to 3" double pitch. Ask for your copy.

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ROLLER CHAIN & SPROCKETS

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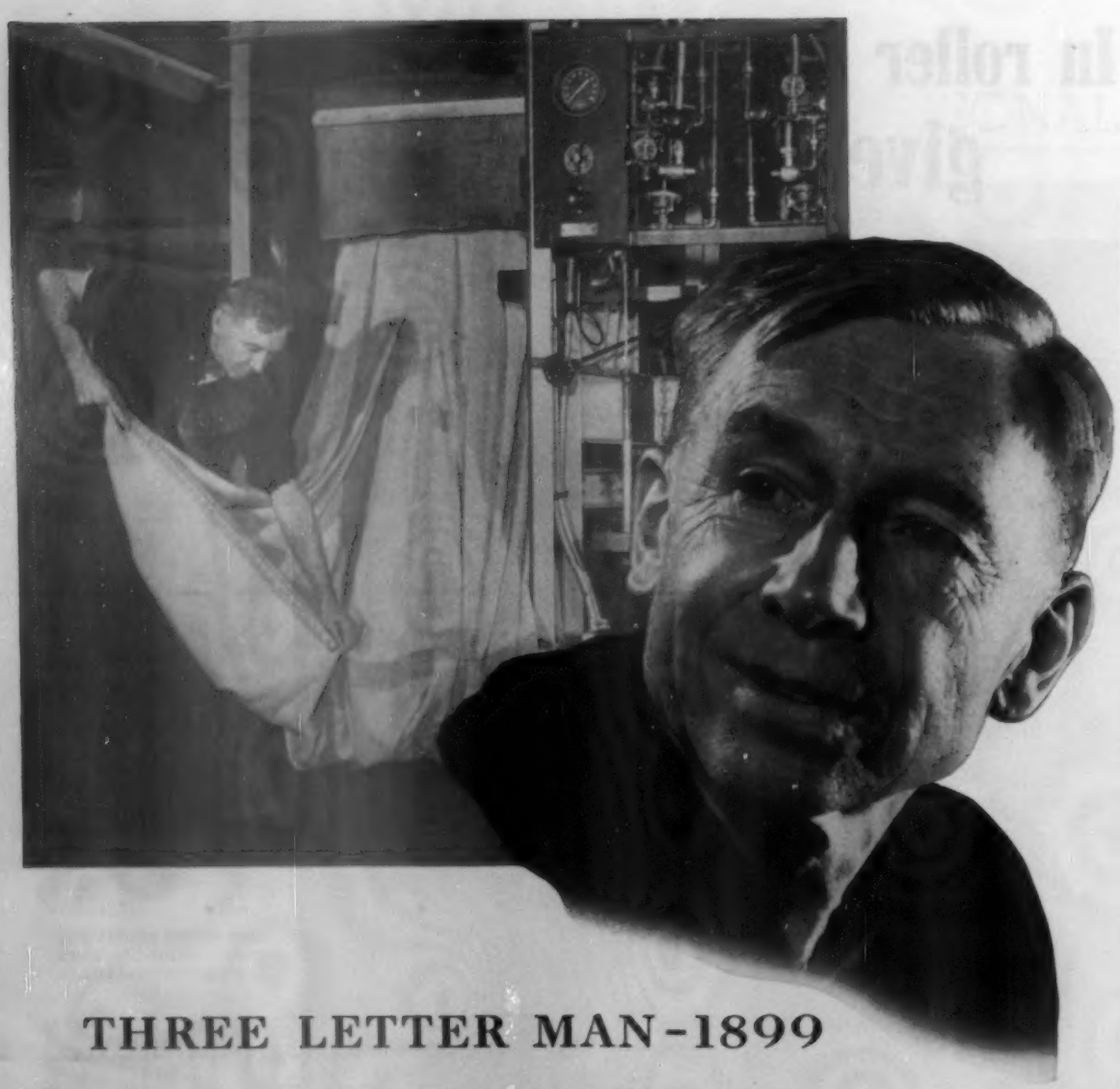
LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.



THREE LETTER MAN-1899

This is keen, wiry Frank Hammer. A real athlete as a boy, he starred in baseball and played rugged football and basketball, too. And, for 53 years, Frank has been putting his vitality and team spirit to good use in the production of sturdy felts. Today he's a fulling expert—checking Appleton felts through the fulling mill that shrinks them down for finish, strength, and a good, firm fit.

Frank Hammer is typical of the steady, long-experienced workers at the Appleton Woolen Mills . . . a 73-year-old organization dedicated to development, progress, and the production of ever finer felts—for the finest paper-making.

APPLETON WOOLEN MILLS

APPLETON, WISCONSIN

PULP & PAPER

STRICTLY PERSONAL

MIDDLE WEST NEWS

Sutherland and Sund Win Elections in Wisconsin

ED SUTHERLAND, Thilmany P & P secretary-treasurer, led four candidates with the highest vote for Appleton board of education, 3-year term. ROY SUND, executive v.p., mfg., Marathon Corp., was easily reelected to Neenah's school board.

HERBERT D. STUBER, a Dow Chemical man since 1941, has opened an office in Indianapolis (5416 No. College Ave.) to represent its Saran Lined Pipe Co. subsidiary to paper mills, etc., in parts of Ohio, Illinois, Indiana and Kentucky. He was supt. of Dow's Saran rubber dept.

WILLIAM J. DAVIS, former manager in Chicago, is new director of sales, Rhinelander Paper Co.

Advance in Paterson Parchment

KARL DAMMANN (left), new General Mgr. of Paterson Parchment Paper Co., Bristol, Pa., and re-elected a Director. He was Gen. Plant Supt. and prior to to that, Supt. of Maintenance.

G. DAVID STURGEON (right), who advanced to Supt. of Maintenance at the Bristol Mill. He is a graduate engineer from U. of Penn and joined Paterson in 1953.

FRANK R. WALSH, manager of Ahdawagam Division (cartons, containers, tubes) of Consolidated Water Power & Paper Co., Wisconsin Rapids, announces **WILLIAM S. GRIMES,** plant supt. since 1948, with a master's from the Institute of Paper Chemistry, is new asst. division mgr. **WALLACE E. SYDANMAA,** plant engineer, is new plant supt., and **PERCY J. COX,** chemical engineer, is new tech. director. The latter two graduated from Mich. College of Mining & Technology.

FOSTER P. DOANE, JR., who came to Midwest from Sandy Hill to head Bergstrom Paper's production, recently bought lake shore property on Lake Winnebago south of Neenah from **JOHN R. KIMBERLY, JR.**

WILLIAM E. BUCHANAN, president of Appleton Wire, and **ERNST MAHLER,** retired former executive v.p. of Kimberly-Clark, were re-elected directors of Allis-Chalmers.

WALTER HANDLER, mill supt., has a record of 47 years with Neenah Paper Co. without a lost time accident. **EARL R. WILLIAMS,** Neenah technical production and safety director, recently compiled a unique list of 219 employes (70%) who worked a total of 3,169 years without a lost time accident.

PAUL CARTIER, 65, asst. treasurer of Champion Paper Ohio Division, and **WILLIAM A. NEABLING SR.,** 63, Kimberly-Clark power engineer and millwright, are Midwest industry men who died recently.

EARL D. RHODES, vice president of F. C. Huyck & Sons, discussed manufacture of paper machine felts and showed pictures of Huyck's plant at the May meeting of Ohio Superintendents.

Continued on page 14

"Mersize RM Dry makes Groveton's entire mill operation more efficient."

—John Paugh, Mill Superintendent, Groveton Papers Co., Groveton, N. H.

Another great American papermaker, Groveton Papers Co., Groveton, N. H., producers of Triad fine-quality mimeograph bond and duplicator papers, has switched to Mersize RM Dry. Here's why:

"We realize a high efficiency throughout our plant with Mersize RM Dry," says Mill Superintendent John Paugh. "We have *substantially reduced costs* and *time* spent by adding Mersize RM Dry directly to the beater."

Murray Atkinson, Groveton's beater room foreman, reports: "Easy-to-handle Mersize RM Dry smooths out beater room operation. The men working with Mersize appreciate its *low dusting* and *non-irritating* qualities."

If you use dry size, check these other Mersize RM Dry advantages:

Light color—Mersize RM Dry is very light in color, resists darkening with age . . . produces high-brightness paper comparable to the lightest rosin size.

Low foam—Mersize RM Dry's low foam index helps eliminate countless production problems.

For full information on how Mersize RM Dry can make your mill process more efficient, write Organic Chemicals Division, MONSANTO CHEMICAL COMPANY, Box 478-V-3, St. Louis 1, Mo.

Check list of Monsanto's complete line of fortified sizes:

Mersize CD-2—Concentrate, for use with rosin size
Mersize CD-2 Dry—Concentrate in dry form
Mersize RM 70%—Complete fortified paste size
Mersize RM 77%—Complete fortified paste size

Mersize: Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS – PLASTICS

SERVING INDUSTRY WHICH SERVES MANKIND

STRICTLY PERSONAL

MIDDLE WEST NOTES

JOHN C. WOLLWAGE, new associate manager of products development and market research for Kimberly-Clark, has been elected chairman of a newly formed Tri-Cities Boy Scout District (Appleton-Neenah-Menasha).

RICHARD BAKER has been promoted to public relations director of Ansul Chemical Co., and **BRAD SEBSTAD** replaced him as adv. mgr.

RALPH WHITE, division gen. mgr. of Container Corp. of America plants at Anderson, Ind., Cincinnati and Cleveland, is a new CC of A vice president.

Each Has Over 40 "Safe Years"

WALTER HANDLER (left), Mill Supt., Neenah Paper Co., Neenah, Wis., has worked 47 years with that mill without a lost time accident. HATTIE CRAIG (right), worked 45 years with a similar record. Earl Williams, Neenah Technical Production and Safety Director, has figured out that 219 employes (70% of Neenah staff) have 3,169 man-years of work without a lost time accident.

NORTHEAST NEWS

New Ross and Graver Men; Hamilton, Haggerty Promotions

J. D. CRELL has been appointed Graver Water Conditioning Co., sales engineer for New York area (office, 216 West 14th), says **H. R. FOSNOT,** sales mgr.

PAUL GOLDER has joined J. O. Ross Engineering Corp., based in the New York office (444 Madison Ave.), to serve pulp and paper mills in New York state. He has had considerable experience in air systems for this industry.

WALKER HAMILTON JR. is sales rep. for Oxford Paper Co. out of New York.

PAUL L. HAGGERTY has been promoted to technical director and asst. supt., Geo. LaMonte & Son, Nutley, N.J.

DWIGHT L. MONACO, widely known in the paper industry as production executive of McGraw-Hill Publishing Co., has joined Hughes Corp., printing and affiliates service, 71 West 35th, New York 1, N.Y., as vice president for management and sales. Mr. Monaco was formerly with KVP Co. and has made talks at graphic art sessions. Hughes has 6 printing plants. One of them prints PULP & PAPER.

A. W. ARON has been promoted to v.p. in charge of industrial products, and **JULIAN MENDELSOHN** to v.p. in charge of multiwall div., Hudson Pulp & Paper Corp. Both are sales managers of their divisions.

WILLIAM H. TURNER continues to head up Geigy Dyestuff's New England branch with its move to 33 Industrial Place, Newton Upper Falls 64, Mass. Previous NE operations from Boston, and Providence will be consolidated in Newton Upper Falls.

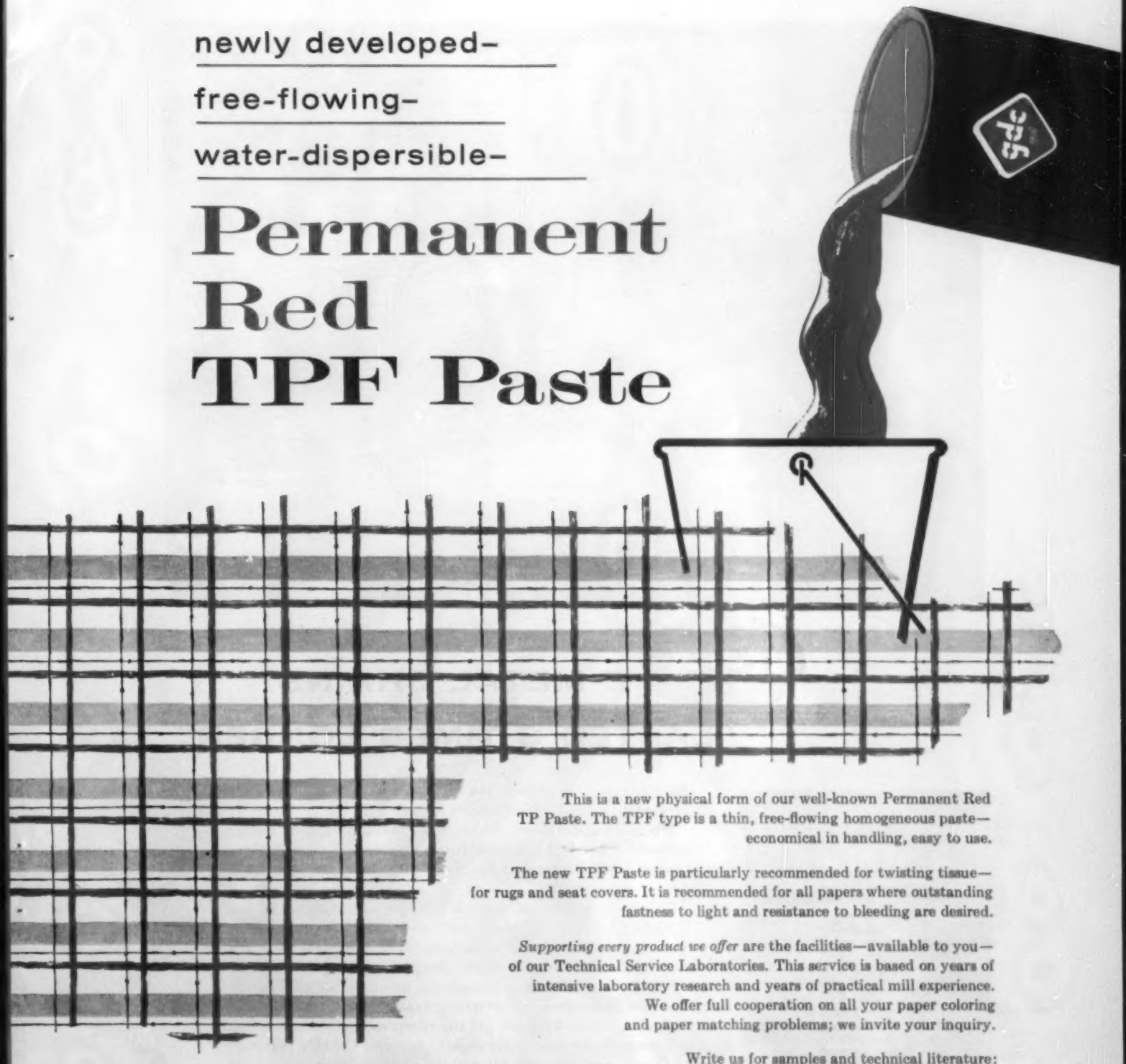
Continued on page 18

newly developed–

free-flowing–

water-dispersible–

Permanent Red TPF Paste



This is a new physical form of our well-known Permanent Red TP Paste. The TPF type is a thin, free-flowing homogeneous paste—economical in handling, easy to use.

The new TPF Paste is particularly recommended for twisting tissue—for rugs and seat covers. It is recommended for all papers where outstanding fastness to light and resistance to bleeding are desired.

Supporting every product we offer are the facilities—available to you—of our Technical Service Laboratories. This service is based on years of intensive laboratory research and years of practical mill experience. We offer full cooperation on all your paper coloring and paper matching problems; we invite your inquiry.

Write us for samples and technical literature; call upon our skilled technical service.

From Research to Reality

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REX® Z-METAL CHAINS

"LASTED 3 TIMES LONGER"

Here's a typical example of the way you can cut costs... get better service with Rex Z-Metal Chains in your mill.

On this transfer conveyor, standard malleable chains needed replacement every 15 months. It was replaced by a Rex Z-Metal Chain. Z-Metal operated for more than four years before it needed replacement.

This isn't the unusual story. It's typical of the ability of Rex Z-Metal Chains to withstand the pounding of logs...the heavy loads...the abrasive sliding service. Many mills have had even more success with these rugged, long-lasting chains.

Rex Z-Metal Chains are available in all styles used in the forest products industry...fit over the same sprockets as standard malleable chain. Why not get the complete story on how you can get more for your chain dollar? See your CHAIN Belt Man or Distributor, or write for your copy of Bulletin No. 53-56. CHAIN Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.

CHAIN BELT COMPANY

District Sales Offices and Distributors in all principal cities

PULP & PAPER

STRICTLY PERSONAL

NORTHEAST NOTES

GEORGE INGRAM, JR., comptroller, Riegel Paper Corp., has been elected an officer of the new corporation following its reincorporation under Delaware law.

WILLIAM E. REID, president, Riegel Textile Corp., is a new director and

GERMAN H. H. EMORY, vice chairman of the board of Riegel Textile, is now vice chairman, Riegel Paper.

VERNON C. WATERS, 58, superintendent, Knowlton Bros. Inc., mill, Watertown, N.Y., died May 4 two days after suffering a cerebral hemorrhage. Born in Old Town, Me., he started in the industry 40 years ago for Eastern Corp., Brewer, Me., later working for Orono P & P, H. & W. Co. in Maine and Alabama, Gilman Paper, where he was gen. supt. 1941-50. He was with St. Lawrence at Norfolk, N.Y., about a year before going to Knowlton Bros.

For Hercules and Warren

DR. W. D. THOMPSON (left) new Sales Mgr., Miscellaneous Paper Chemicals, Hercules Powder Co., Paper Makers Chemicals Dept., Wilmington, Del. He will coordinate sales of wet strength resins, wax emulsions, defoamers and 'Aquapel,'" the new alkylketene dimer size (see story, page 132, Apr. issue of P & P).

V. EDWIN WARE (right) recently Plant Manager, Wheelwright Div., Doeskin Products, Inc., has been appointed Sales Engineer specializing in pulp and paper for Warren Steam Pump Co., Inc. He will headquarter at Warren, Mass.

J. W. HARTUNG, former purchasing agent for St. Regis' Kalamazoo mill, is now manager of the St. Regis central purchasing dept., New York. **W. H. MONJE** is new assistant manager of the purchasing dept.

PAUL S. COOPER, Westport, Conn., will handle the complete line of Bulkley, Dunton Processes equipment, including Colloidair Separators for clarification of waste and process liquids, in Conn., Mass., R.I., Vt., N.H. and Maine.

JOHN M. WILSON has been named chief engineer of development and design div., engineering dept., Minneapolis-Honeywell's Brown Instruments div.

EDWARD Z. KING, JR., formerly assistant to the auditor, International Paper Co., was recently elected assistant treasurer.

A. L. HAMM, former head of paper mill equipment div., Combustion Engineering, Inc., recently died after a prolonged illness. He served with C-E from 1926 until 1949 and was widely known for his work in establishing basic pattern and modern recovery units.

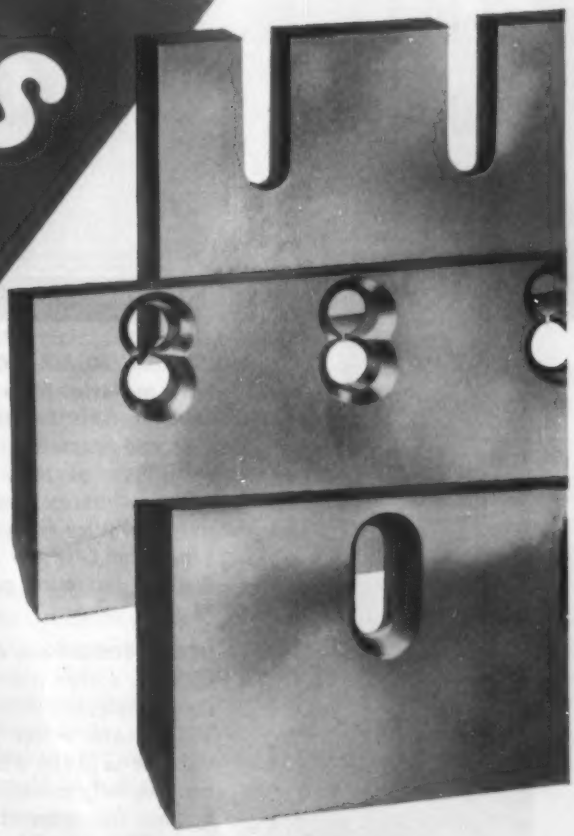
ARTHUR HORWITZ has been appointed plant engineer at Stone Container Corp.'s Franklin paperboard mill, according to **JOSEPH J. FIORI,** vice president and general manager of the division.

R. W. HARDING, formerly executive assistant to the managing director of the Fourdrinier Kraft Board Inst., Inc., has recently joined American Cyanamid Co.'s paper chemicals dept. to handle sales in Eastern N. Y.

Continued on page 22

Get the DUST OUT of your PROFITS

...with SIMONDS T-18 CHIPPER KNIVES



More usable chips . . . clean-cut and uniform in size . . . with a minimum of slivers and dust . . . this is what you *want* from your woodroom . . . this is what you *get* with SIMONDS T-18 KNIVES on your chippers! Made of extra tough steel developed and poured in Simonds own Steel Mill, these rugged, shock and abrasion resistant knives are known for their ability to take the high speed, brutal beating of chipper operation . . . to hold a keen cutting edge . . . to turn out clean-cut, uniform chips. Try T-18 Knives on *your* chippers . . . get the dust out of *your* profits. Order through your Industrial Distributor.

For Fast Service from Complete Stocks

Call your SIMONDS Industrial Supply DISTRIBUTOR

SIMONDS SAW AND STEEL CO.

FITCHBURG, MASS.

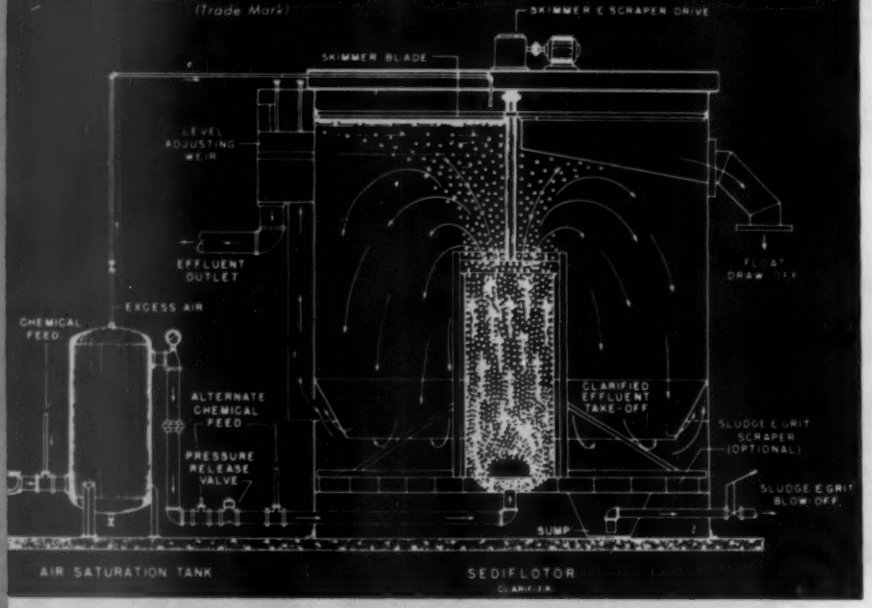
Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon, Canadian Factory in Montreal, Que.
Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Simonds Abrasive Co., Phila., Pa. and Arvida, Que., Canada

NOW INFILCO ...LEADER IN WASTE-TREATMENT EQUIPMENT ENGINEERING presents the

SEDIFLOTOR Clarifier

(Trade Mark)

versatile new 2-in-1 flotation unit



1. "DISSOLVED-AIR FLOTATION" assures rapid removal of suspended fibre material from white water. Based on the principle of "dissolved-air flotation," and incorporating reliable chemical feed and operating control, the "SEDIFLOTOR" clarifier offers substantial savings to paper mill operators. For example, one plant estimates a saving of about $180.00 per day recovering pulp and filler from whitewater treated at a rate of 300 g.p.m. Whenever flotation is effective, the "SEDIFLOTOR" clarifier produces a float of maximum consistency in a unit occupying a minimum of floor space.

2. HEAVY SOLIDS are also removed. "SEDIFLOTOR" clarifier design provides for the separation of dense materials which are not removed by flotation. This means better clarification regardless of variations in the whitewater. Settled solids are continuously moved by a bottom scraper arm into a sump for removal. The "SEDIFLOTOR" clarifier is readily adaptable for use with present equipment and may be designed for any flow for installation in circular or rectangular tanks.

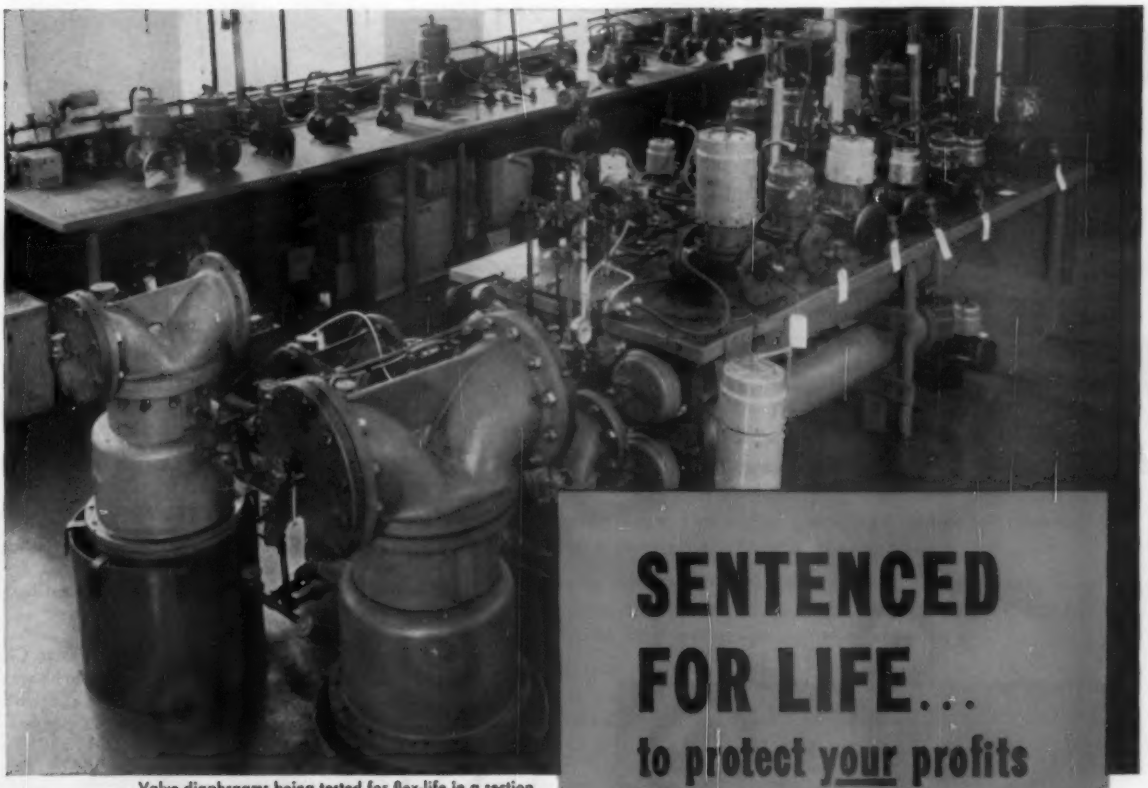
Our laboratory is equipped to test samples of white water to determine suitable methods and proper size of equipment for your needs. Your inquiry is invited and should include general description of your problem.

INFILCO

The one company offering engineered equipment for all types of water and waste processing—coagulation, precipitation, sedimentation, flotation, filtration, ion exchange and biological treatment.

INFILCO INC. 920 South Campbell Ave., Tucson, Arizona
Field offices in principal cities in North America

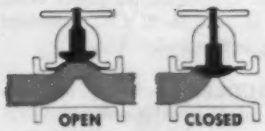
5520A



SENTENCED FOR LIFE...
to protect your profits

Valve diaphragms being tested for flex-life in a section of Grinnell's extensive Testing Laboratory.

Rubber mill for mixing experimental diaphragm compounds.



Check these important features:

- Diaphragm absolutely isolates working parts from the line fluid.
- Diaphragm lifts high for full, streamline flow in either direction.
- Diaphragm effects positive, leak-tight closure.
- Body, lining and diaphragm materials to suit service.
- Diaphragms easily replaced without removing valve body from line.

GRINNELL-SAUNDERS DIAPHRAGM VALVES have won an envied reputation for long, trouble-free service under the toughest operating conditions. One reason is Grinnell's continuous test program. In this life-test laboratory, valves and diaphragms operate day and night, through thousands of opening and closing cycles, to pre-prove performance. Result — better valves for all types of services.

This program of continuous testing is the basic reason why so many different industries are turning to Grinnell-Saunders for diaphragm valves with *pre-proved* performance. There are standard types for a wide variety of applications . . . in the handling of corrosive liquids, gases, beverages, compressed air, fluids loaded with suspended solids — on lines where leakage, corrosion, clogging, abrasion, or contamination could be costly.

Are your valves giving you the dependable, long service life you must get to maintain economy and efficiency? If they are not, it will certainly pay you to consult a Grinnell engineer.

GRINNELL-SAUNDERS DIAPHRAGM VALVES

Grinnell Company, Inc., Providence, Rhode Island • Coast-to-Coast Network of Branch Warehouses and Distributors

pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves
Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies
industrial supplies • Grinnell automatic sprinkler fire protection systems • Amco air conditioning systems

PULP & PAPER — STRICTLY PERSONAL

PACIFIC COAST NEWS

Olfson is South Gate Mgr.
Hooker Attends Harvard

BILL MARSHALL, Pacific Coast representative the dyestuffs dept. of American Cyanamid's organic chemicals division, and his wife, Gladys, phoned ye editor in Chicago on the way to a vacation in Maine and a visit with **JACK LOOMIS**, retired Cyanamid sales executive, 324 Frankel Blvd., Merrick, Long Island.

E. E. OLFSON, with Fibreboard Products since 1931, is new res. mgr. of its South Gate, Calif., division. **P. N. HALGREN**, former industrial engineer in the Antioch, Calif., division, succeeded him as asst. plant mgr. in Vernon, Calif.

HORACE HOOKER, western sales manager for Hooker Electrochemical Co., Tacoma, Wash., enrolled for a 16-week graduate business school course at Harvard University.

Take New Posts in West

For Weyerhaeuser Timber Co., these men take over new duties (l to r): JOSEPH C. BROWN, former Pulp Supt., Springfield, Ore., now Asst. Mills Mgr., Pulp Div., Longview, Wash.; FRED KEENEY, former Chief Chemist, Everett Sulfite Mill, now Tech. Director, Springfield Pulp Div.; HAROLD HOUTZ, formerly of Stauffer Chemicals, now Mgr. of new Weyerhaeuser Chlorine Plant, Longview.

CLARENCE H. ANDERSON has been located in Everett, Wash., on Scott expansion as a project engineer for Chas. T. Main, Inc.

HOWARD BECKER transferred from CZ San Francisco headquarters, where he was resident purchasing agent, to Crown's Camas, Wash., plant as assistant purchasing supervisor.

F. S. (STEW) MORGAN, former development and plant engineer at St. Helens P & P, is now a vice president of Fraser, Weir & Associates, Inc., 20 No. Wacker Drive, Chicago, and recently visited South Africa to inspect work an associate company had done in controlled maintenance in plants there.

GEORGE E. EMIGH SR. AND JR., father and son, were recently announced here as Pacific Coast reps. of Sandy Hill Iron & Brass Works. Now we have their address—Mr. Emigh, Sr. at 8980 San Antonio Ave., South Gate, Calif., and his son, 3937 N.E. Shaver St., Portland 13, Ore.

GRAY HARROWER has moved from San Francisco to Portland, Ore., to represent Crosby Chemicals, his offices being with W. M. Gillies & Co., American Bank Bldg. in Portland.

WM. J. PRUDLER is new v. p. and asst. gen. mgr. of National Container Corp. Pacific Coast operations, continuing as local manager also at Oakland. He reports to **GEO. J. SCHNEIDER**, exec. v.p. and Coast gen. mgr., Los Angeles. **L. C. HAIGHT** is new v.p. and asst. treasurer of Coast operations, based in Los Angeles. **CARL J. DUNIVIN** is asst. v. p., sales mgr. and asst. to gen. mgr., as well as Los Angeles plant asst. mgr. **H. J. O'BRIEN** is new asst. v.p. and special sales mgr. of Oakland plant.

Continued on page 26

STONITE®

is a registered trade name

. . . for one of a group of highly specialized rubber roll coverings developed and supplied solely by Stowe-Woodward, Inc.

Naturally, we take pride in the fact that "Stonite" rolls have become a standard of the industry, and that the name "Stonite" is widely known by papermakers all over the country.

But it is a matter of grave concern to us that the name "Stonite" is increasingly used indiscriminately to describe other rubber covered rolls.

"Stonite" is a proper noun with only one definition. If you want the outstanding roll performance which ONLY "STONITE" gives . . . call your Stowe-Woodward Sales Engineer. He's the only one who can bring you the advantages of "Stonite" spelled with a capital "S".

"RUBBER ROLLS with a REPUTATION"

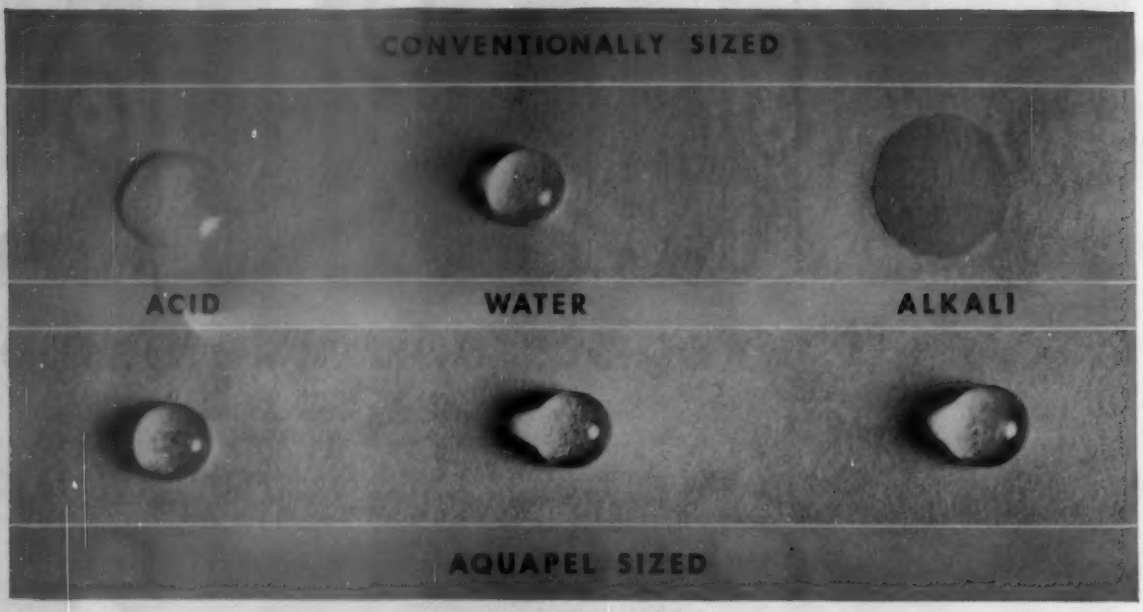
S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN — NEWTON 64, MASSACHUSETTS — GRIFFIN, GEORGIA

These Drops Tell the Story:



ACID, WATER, OR ALKALI— IT'S ALL THE SAME TO AQUAPEL®

More and more paper mills are finding out that a little Hercules Aquapel can make a big difference. The photographs above tell part of the story.

The same grade of paper was used for both tests, but one sheet was conventionally sized; the other was Aquapel sized. Drops of acid, water and alkali were placed on both, and while the conventional sizing has resisted only the water, Aquapel has prevented all three from penetrating the surface.

One of the reasons for Aquapel's superior performance is that Aquapel is not just "another sizing agent". Aquapel is an entirely new concept in sizing for the paper industry. Neither resin nor wax, Aquapel is a chemical compound —an alkylketene dimer. It reacts chemically with cellulose fibers to form a surface that is resistant to penetration of cold water, hot water, acid and alkali. Aquapel sizing is not just "stuck on"; it becomes an integral part of the fiber.

There are other differences. For example, while Aquapel usually is applied on the surface, it is not a surface size in the usual sense. It replaces rather than supplements beater sizing with rosin size and alum.

Aquapel may be applied by any equipment commonly used for surface treatment of paper, such as the size tub, size press, calender box, spray or coating machine. And Aquapel is economical—a little goes a long way.

Investigate the Aquapel difference for yourself. Write Hercules for a sample, and descriptive literature.

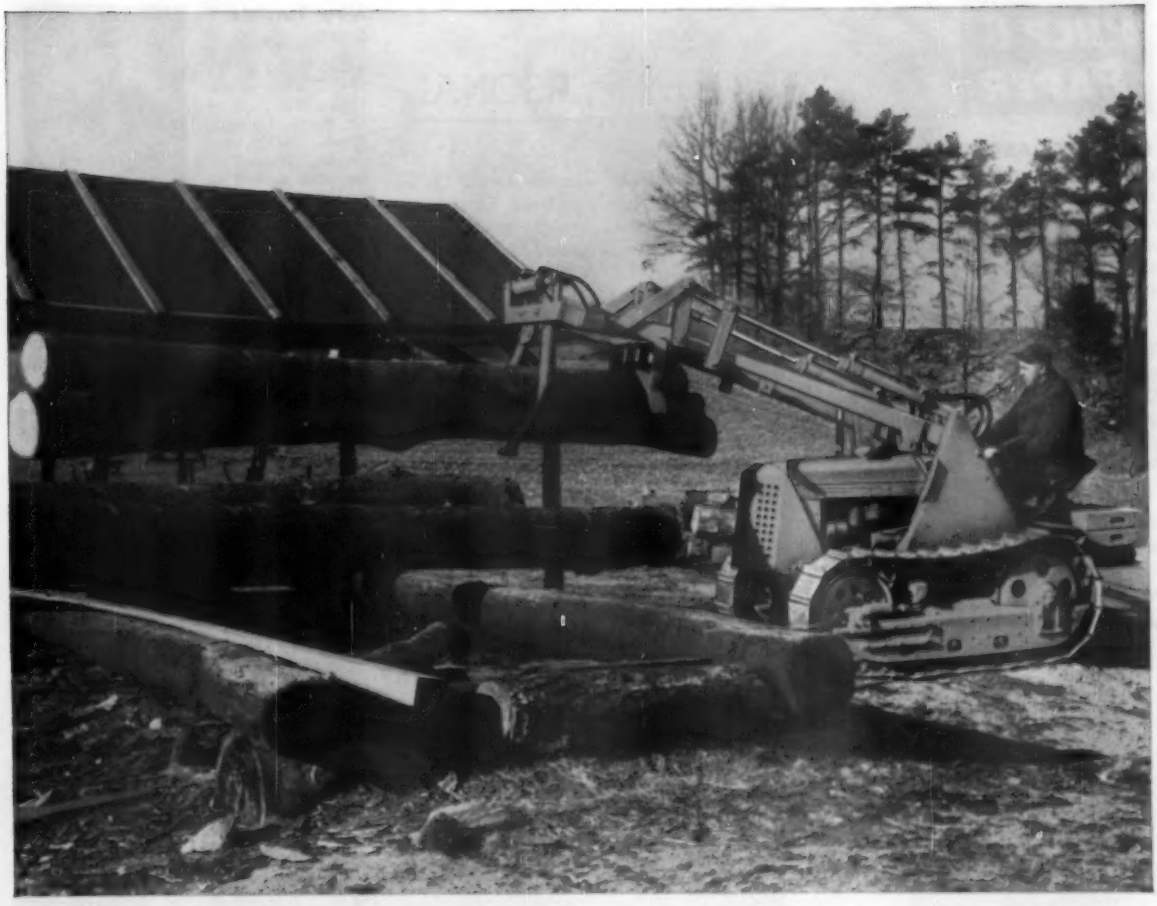
Paper Makers Chemical Department

HERCULES POWDER COMPANY

INCORPORATED

965 King St., Wilmington 99, Del.

PPM-4



Log handling or skidding...the profit choice is OC-3

The rugged Oliver OC-3 is a crawler you can use to greater profit on hundreds of different logging operations. Small and compact, this tractor packs a big 22 drawbar h.p. and accommodates a variety of mounted equipment.

At the mill, the OC-3 is a handy unit for log loading or clean-up work. Its quick maneuverability lets you work in tight spots—places other tractors cannot fit. The logging tong shown above is completely hydraulic; it's one of the attachments that fit to the basic loader arms. The basic unit also converts to a powerful bulldozer in minutes.

In the woods, the OC-3's extra-high clearance and differential steering keep you working in wet, muddy ground—over stumps, ruts—places other tractors are useless. Long-life tracks and fully sealed and lubricated lower track wheels are some of the features that make the OC-3 long on service, low in operating cost.

See your Oliver Industrial Distributor. Try the OC-3 on your work, under your own conditions. Ask for a demonstration soon!

Small and compact, this OC-3 and rear-mounted winch make a perfect team for snaking logs out of dense wooded areas.

THE **OLIVER** CORPORATION

400 W. Madison Street, Chicago 6, Illinois

A complete line of industrial wheel and crawler tractors

PULP & PAPER

STRICTLY PERSONAL

PACIFIC COAST NEWS

GEORGE MARTIN, with Fibreboard Products, Inc., since 1951, and former chief chemist at Antioch, Calif., has been appointed to the head office production department staff as assistant technical director, headquarters at Antioch.

THEODORE "TED" HENRY, for years paper mill superintendent of the former Central Paper Co., Muskegon, Mich., prior to retiring about five years ago, has joined Oregon Pulp & Paper Co., Salem, Ore., on a consulting basis.

CLARENCE CEA, Simpson Paper Co. machinetender and 45 year veteran, received his 4th diamond award for service.

RAD RUSSELL, Simpson Paper Co.'s supt., chairmanned a Coast Operating Supts. organized group meeting in Everett, to discuss mutual problems. Attending were **GLEN KING, CHARLES ACKLEY, J. H. QUIGLEY, E. P. BARTHOLOMEW, FRANK SMALLEY**, all of Crown Z mills; **C. N. SAWYER** and **E. E. ARCHIBALD, JR.**, of Potlatch Forests; **M. M. MURRAY**, Weyerhaeuser, Springfield; **JACK HENRY**, Scott Paper, Everett; **JOHN VICTOR** (now supt. at Jacksonville) and **SID DOLAN**, St. Regis; **JOE FOLEY**, Publishers Paper; **CLARENCE BROWN**, West Tacoma Newsprint; **W. W. CLARK**, Longview Fibre; **FRANK HAMILTON, JAMES RAMSEY JR.**, and Mr. **RUSSELL**, Simpson.

H. C. PIM

F. A. SCOTT

BOARD OF DIRECTORS of Crown Zellerbach Canada Limited has appointed Frank A. Scott, of Vancouver, vice-president in charge of sales, on the recommendation of Harry C. Pim, vice-president and director. This appointment was effective May 1. Mr. Pim, who joined the company in 1919, and has directed the company's sales for many years, is on leave of absence owing to ill-health. He remains as vice-president and director. Mr. Scott, 41, was born in Vancouver, and attended Prince of Wales High School and University of British Columbia. He joined the company 22 years ago, and is widely-known in paper circles in Western Canada. Prior to his appointment to a vice-presidency, Mr. Scott was sales manager. His new responsibilities involve the administration of sales of newsprint, and wrapping and converting lines manufactured by the company, and of boxes manufactured by Canadian Boxes Limited, a division of Crown Zellerbach Canada Limited. Mr. Scott was recently elected a director of Hudson Paper Company, which is affiliated with Crown Zellerbach Canada Limited.

New Tacoma Supt.

SIDNEY T. DOLAN, new Paper Mill Supt. at St. Regis Tacoma, Wash., mill, succeeding John Victor, who moved to Jacksonville. Mr. Dolan was Asst. Supt. in Tacoma, formerly at Potlatch.

By the way, did you know that **ED CAVANAUGH**, who transfers from Port Angeles to Fibreboard's San Joaquin, Calif., division as plant engineer, was a former intercollegiate welterweight boxing champion of the Pacific Coast? He boxed for good old Wash. State College back in the mid-30's.

W. A. KELLY, Coast rep. of Waterbury Felt, is recovering in Wisconsin from broken leg, hip and shoulder, suffered in an auto accident Apr. 3.

CANADIAN NEWS

Joe Foley Heads Powell; Canadian I.P. Promotions

M. J. (JOE) FOLEY went north from his Florida homeland several years ago to help brother **HAROLD S. FOLEY**, who had preceded him by more than a decade, run the affairs of Powell River Co. in British Columbia. His title was executive vice president. At the recent annual meeting in Vancouver Harold announced that he was moving into the new office of chairman of the board, with Joe succeeding him to the presidency.

LOUIE A. JURGENSEN is new paper machine supt., Kenora, Ont., newsprint mill of Ontario-Minnesota P & P, reporting to **E. S. ANDERSON**, paper mill general supt. Mr. Jurgensen came from the Southern industry in U. S. but before going South in 1949, had been with O-M 22 years.

UNO HOLMBERG is new West Coast representative for SF Products, with offices at 207 W. Hastings St., Vancouver, B.C. Mr. Holmberg was with the AB Svenska Flaktfabriken organization in Sweden and at Montreal prior to going west.

EARLE E. SHAW of Montreal has been named senior forestry advisor to the woodlands division of Canadian International Paper Co. He will be succeeded as company chief forester by **FELICIEN RIVARD**, also of Montreal. Formerly in charge of woods operations at Three Rivers, Mr. Shaw was a pioneer in assessing pulpwood resources of Quebec.

Continued on page 30

Coming Our Way?

YOUR SUMMER VACATION TRIP

may bring you and your family to our vicinity. Our Newfane Plant is just 20 miles east of Niagara Falls and Old Fort Niagara . . . an area of scenic beauty and historic interest. The Peace Bridge at Buffalo leads to the Queen Elizabeth Way, and the Canadian lakes and woods. We hope you papermaking folks will visit us, if you find yourselves any place near. Drop in, or better still write or call in advance, and we assure a warm welcome, whether for a social call, a business talk or a brief trip thru our mill, where TENAX papermakers' felts are made.

TENAX FELTS

LOCKPORT FELT CO.

NEWFANE, N.Y. • STARKVILLE, MISS.

Serving the Paper Makers Since 1891

A "Baker's Dozen" in Paper Chemicals

It's an old American custom to build and hold business by giving "something extra." And Solvay's paper chemical business has been built on this sound principle.

Solvay not only supplies paper chemicals of the highest quality at the lowest prices, but gives "something extra" by extending its responsibility into the plants of its customers to assure efficient use, handling and storage of all its products.

To give its customers services not ordinarily available, Solvay maintains a separate section of its Technical Service Department devoted exclusively to paper. This special paper group has years of sound, practical working experience with the paper industry. Their services are available without charge not only for the regular handling, storage and use of Solvay paper chemicals, but also to aid in the development of new processes and methods.

In addition, Solvay's local sales offices with their trained and experienced sales representatives give you the close personal attention that best fits your individual requirements—whether you order by the bag or in carload lots.

To get the finest in paper chemicals plus "something extra," be sure to specify Solvay when you place your next order.

SODA ASH
CAUSTIC SODA
LIQUID CHLORINE
CALCIUM CHLORIDE

SOLVAY

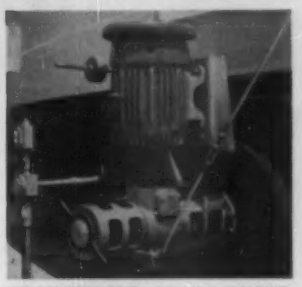
SOLVAY PROCESS DIVISION
ALLIED CHEMICAL & DYE CORPORATION
61 Broadway, New York 6, N. Y.

BRANCH SALES OFFICES
Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit
Houston • New Orleans • New York • Philadelphia • Pittsburgh
St. Louis • Syracuse

Soda Ash • Snowflake® Crystals • Potassium Carbonate • Calcium Chloride • Sodium Bicarbonate
Ammonium Bicarbonate • Cleaning Compounds • Caustic Potash • Sodium Nitrite • Caustic Soda
Ammonium Chloride • Chlorine • Monochlorobenzene • Para-dichlorobenzene • Ortho-dichlorobenzene
Chloroform • Methylene Chloride • Methyl Chloride • Carbon Tetrachloride

MIX LARGE VOLUMES rapidly with a turbine-type LIGHTNIN Mixer, scientifically sized to fit the requirements of your process. Available in hundreds of power-speed combinations. Fully guaranteed. Shipped ready to install.

UNIFORM 6% STOCK, without costly control measures, is produced in vertical unbaffled stock chest by heavy-duty LIGHTNIN. Sizes to 500 HP.



CUT MAINTENANCE to a new low with LIGHTNIN Side Entering Mixers in rectangular chests and smelt dissolving tanks. Shut off mixer stuffing box from tank, for repacking, as simply as turning a valve. Or specify the new, fully-tested, quickly replaceable mechanical shaft seal that eliminates *all* repacking—forever!

Do your fluid mixers give you maintenance savings like these?

There are no costly maintenance headaches hiding in the tanks you see above.

Even though the shaft on the turbine-type LIGHTNIN Mixer is 12 feet long, it runs smoothly—and safely—without the nuisance and expense of a submerged steady bearing on the tank bottom.

What's more, the gears in this mixer will never need replacement because of damage caused by flexing of the overhung shaft.

Even if someone accidentally drops a heavy sack of material on the impeller while it is turning, the shock can't reach the gears. They're protected by a unique hollow-quill construction that insulates shaft from gearing.

How interchangeable parts protect you

There are no "special" parts in the mixer. It is built entirely of standard, mass-produced components, easy to replace on short notice.

If your process should ever change, you can in all probability convert your LIGHTNIN Mixer to fit the new conditions, without drastic reconstruction. Mountings, shafts, impellers are all interchangeable.

You can change even the *speed* on a turbine-type LIGHTNIN—by replacing two easy-to-get-at gears, without dismantling the unit or taking it off the tank.

What this means to you

These advantages add up to a low rate of mixer obsolescence—as well as low maintenance cost—when you mix with LIGHTNIN Mixers.

Thousands of LIGHTNINS are in service now. Hundreds have been in service 20 years and more.

For quick, competent help on any fluid mixing operation in your mill, call your LIGHTNIN Mixer representative. Or write us today.

Lightnin® Mixers

GET THESE HELPFUL FACTS ON MIXING

LIGHTNIN Catalogs contain practical data on impeller selection; sizing; best type of vessel; installation and operating hints; full description of LIGHTNIN Mixers. Yours without obligation. Check and mail coupon today.

MIXCO
fluid mixing specialists

- ☐ DH-50 Laboratory Mixers
- ☐ DH-51 Explosionproof Laboratory Mixers
- ☐ B-102 Top Entering Mixers (turbine and paddle types)
- ☐ B-103 Top Entering Mixers (propeller type)
- ☐ B-104 Side Entering Mixers
- ☐ B-106 Condensed Catalog (complete line)
- ☐ B-107 Mixing Data Sheet
- ☐ B-108 Portable Mixers (electric and air driven)

MIXING EQUIPMENT Co., Inc.
141-f Mt. Read Blvd., Rochester 11, N. Y.

In Canada: Greey Mixing Equipment, Ltd.
100 Miranda Avenue, Toronto 10, Ont.

Please send me, without obligation, catalogs checked at left.

Name_____ Title_____

Company_____

Address_____

City_____ Zone_____ State_____

PULP & PAPER

STRICTLY PERSONAL

CANADIAN NOTES

ELLIOTT M. LITTLE, president of Anglo-Canadian Pulp and Paper Mills, has been elected a director and vice president of Supervised Executive Fund (1955) Ltd., a newly-formed investment fund permitting deferment of income and tax liability for participating investors.

H. ROY CRABTREE becomes a member of the board of Donnacona Paper.

KENNETH A. MINERS has been appointed vice president of the Great Lakes Paper Co. He continues as a secretary treasurer.

A. L. POMEROY, former asst. purchasing agent of Howard Smith Paper Mills has been appointed supervisor of purchasing dept., Cornwall division.

JAMES S. BROWN has retired as sulfite superintendent, Abitibi Power & Paper Co.'s Iroquois Falls mill.

F. A. SCOTT, Vancouver, B.C., has been appointed vice president of Crown Zellerbach Canada Ltd. in charge of sales.

W. C. R. JONES, formerly mill manager of Columbia Cellulose Co. at Prince Rupert, B. C., has assumed his new duties as vice president in charge of public relations, Powell River Co.

HARRY W. MORGAN, CLIFFORD STUPFEL and **DON DENMAN JR.**, three engineers of Crown Zellerbach Canada Ltd. and its affiliate Canadian Western Lumber Co., have left for Scandinavia to study log utilization methods there.

W. A. CHRISTOPHER has been appointed manager of International Pulpwood Supply Co., Crown Zellerbach Canada subsidiary, and will be in charge of chip buying.

D. W. AMBRIDGE, president of Abitibi Power & Paper Co., Toronto, has been elected to the board of Canada Iron Foundries, Three Rivers.

JAMES PETRIE, mill manager, and **KEITH EADIE**, plant engineer, MacMillan & Bloedel at Port Alberni, B.C., have been visiting mills in Sweden and Finland studying new methods of pulp manufacture.

Mathieson Chlorine: *worth its salt*

Row upon row of mercury cells characterize the uniform high purity of Mathieson chlorine. These cells decompose a salt solution by electrolysis to form a sodium amalgam and wet chlorine gas. Subsequent processes dry the gas, liquefy and cool it, resulting in chlorine approximately 99.9% pure. Above is one of five producing units from which Mathieson supplies quality chlorine to industries from Canada to the Gulf.

Consistent product quality is typical of all Mathieson chemicals. In addition, Mathieson offers consumers the protection of multi-plant production facilities . . . 3 major alkali plants, 7 sulphuric acid plants, 6 caustic soda plants, 3 ammonia plants . . . as well as practical technical assistance with chemical handling and application problems.

In planning your chemical requirements call in your Mathieson representative. Perhaps you can buy to better advantage from one of America's largest producers of basic industrial chemicals.

MATHIESON CHEMICALS

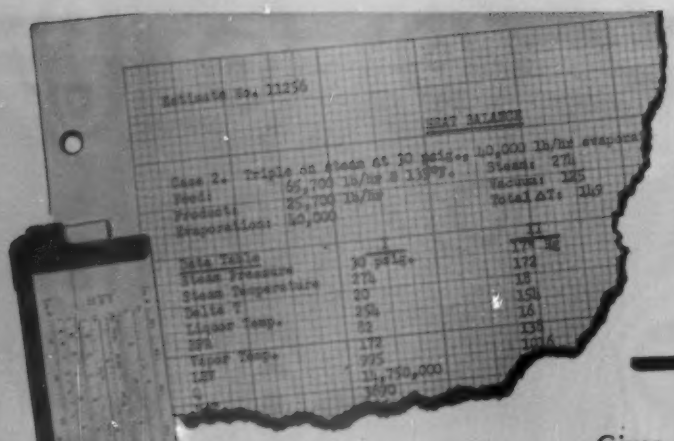
OLIN MATHIESON CHEMICAL CORPORATION

INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

2422

MATHIESON

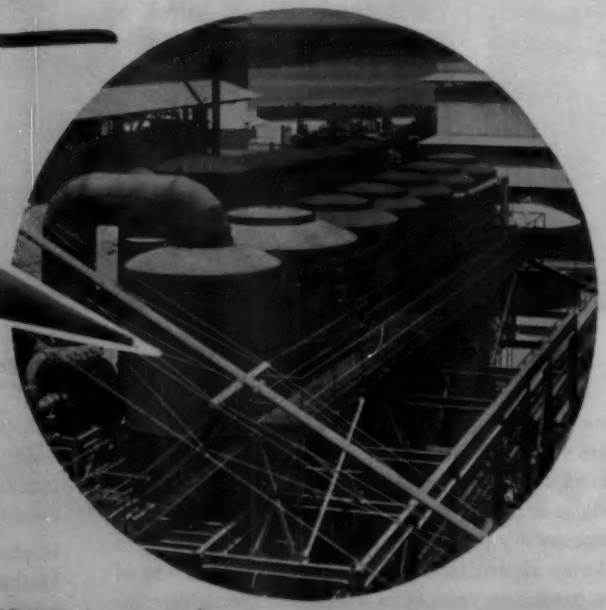
CAUSTIC SODA • SODA ASH • CHLORINE • SULPHURIC ACID • SULPHUR • AMMONIA • NITRATE OF SODA • BICARBONATE OF SODA • NITRIC ACID • SULPHATE OF AMMONIA • SODIUM CHLORITE PRODUCTS
ETHYLENE OXIDE • ETHYLENE GLYCOL • DIETHYLENE GLYCOL • TRIETHYLENE GLYCOL • POLYGLYCOLS • DICHLORODIETHYL ETHER • ETHYLENE DICHLORIDE • METHANOL • SODIUM METHYLATE • ETHYLENE AMINES



The right start here

Given only the process conditions, GOSLIN-BIRMINGHAM Engineers are prepared to design chemical process installations for your plant and take *full responsibility* for the process, workmanship and material. This complete responsibility, inside one fence, under one roof and by one organization . . . from slide rule to freight car . . . assures you of the ultimate in maximum efficiency at minimum cost!

cuts costs here—



Six body, sextuple effect, long tube, vertical film type Black Liquor evaporator in service at the new Jacksonville, Florida mill of the St. Regis Paper Co.

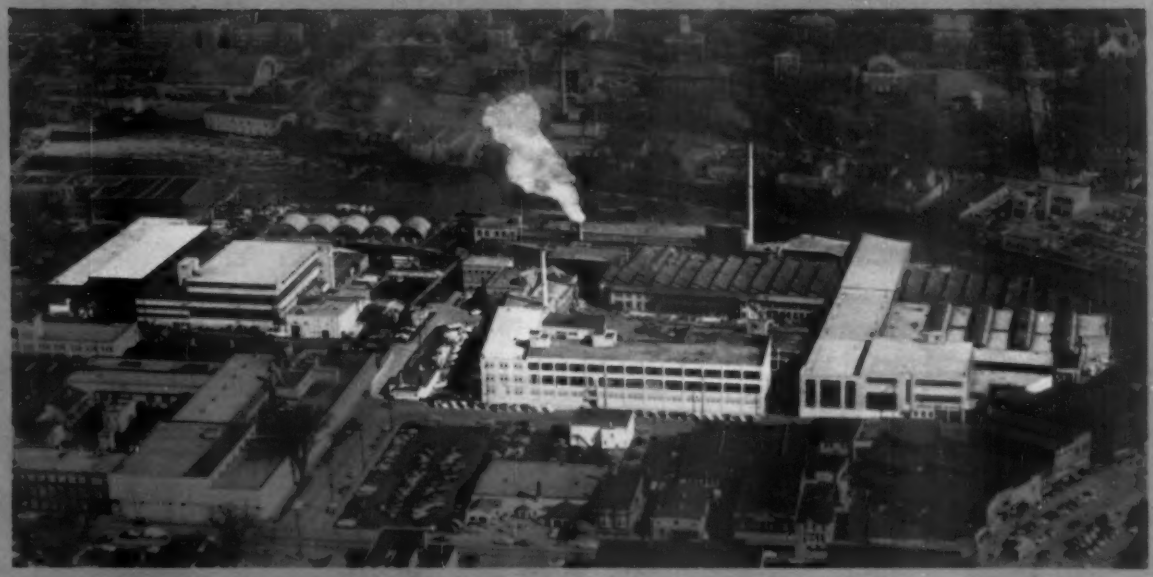
G-B ENGINEERS are at your service any time to discuss your requirements . . . without cost or obligation.

GOSLIN-BIRMINGHAM MANUFACTURING CO., INC.

BIRMINGHAM · ALABAMA

The Beloit Album

Beloit Iron Works from the air; conferences with friends; quality control. Newsworthy personalities and events in the world of paper, as seen by the Beloit camera's roving eye



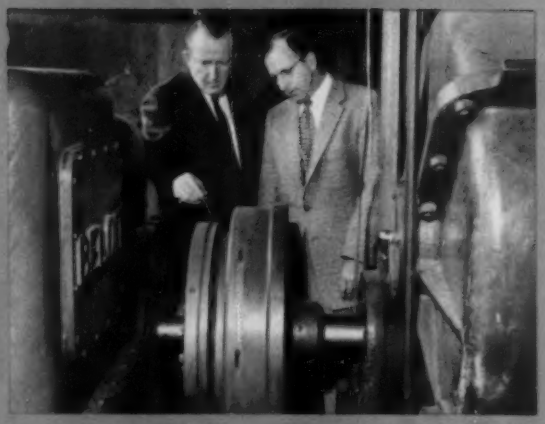
HISTORIC ROCK RIVER forms the eastern boundary of Beloit Iron Works, at Beloit, Wisconsin. Further east across the river is the campus of Beloit College, some of whose buildings can be seen at the top of the photograph. Beloit College was founded in 1847, Beloit Iron Works in 1858. The aerial view shows plant's 16-acre site. Total floor area: 660,000 square feet.

FROM FINLAND three Enso-Gutzeit Co. officials visit Beloit: president William Lehtinen, Lauri Alanko, Pentti Halle. Mr. Lehtinen is shown *(seated, right)* with Beloit chairman, E. H. Neese. Standing: A. G. Olson, Mr. Alanko, H. C. Moore, C. R. Whipple, and Mr. Halle.

SCOTT PAPER CO'S vice-president J. L. Ober and chief engineer A. J. Karpinski discuss new mill installations with members of Beloit Iron Works during a recent visit to Beloit. *(l. to r.)* C. E. Macklem, Mr. Karpinski, H. C. Moore, E. D. Beachler, Mr. Ober, and B. L. Hammill.

The Beloit Album

Behind the start-up of every paper machine is a record of many men, miles, and machine tools. The Beloit Album brings you some of the highlights, with emphasis on the human factor—for the finest machine is, after all, the product of many hands and minds. Reports from Beloit personnel literally come from "all over the map"—from T. J. Burns, Beloit's Southern representative; from R. A. Goodwillie, of the West Coast office; from G. J. Bertrand, of Beloit's Paris office, covering Central and Southern Europe and the Scandinavian countries; and many others. Customers visit Beloit, too, as is shown in the accompanying pictures. Personal contact is essential. In our book, it is also one of the pleasantest parts of the job—enabling us to meet friends, talk over problems, and make Beloit more truly *"your partner in papermaking."*



ROME KRAFT'S general superintendent L. C. Crowder *(right)* and Beloit's Southern representative, T. J. Burns, examine a differential drive unit on the new Beloit 252" Fourdrinier Board Machine at Rome Kraft Co., Rome, Ga. Differential units link sections of machine mechanically.

WET END REBUILD is here being discussed by E. A. Crawford, engineering manager of the Continental Paper Co., with C. R. Whipple, Beloit sales engineer. Individual attention to each customer's requirements is the primary consideration of the men who directly contact the mills.

CUSTOMERS' NEEDS get personal attention of D. R. Schamp, Beloit sales engineer, and R. F. Foslin, assistant foreman, shipping floor, here shown looking over a shipment of differential drive units. Daily schedule requires continuous supervision of mills' requirements.

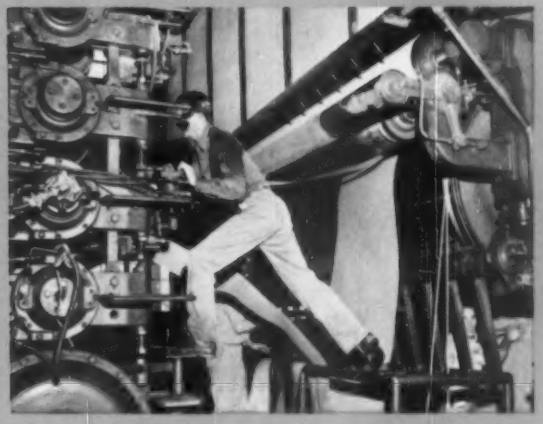
CANADIAN VISITOR R. L. Fraser, resident manager, Manitoba Paper Co. Ltd., discussing a machine rebuild with E. S. Skinner, asst. chief engineer, F. G. Ramsden, asst. sales manager, and L. E. Dennis, staff engineer in the engineering department at Beloit Iron Works.

IMPROVED TISSUE DRYING discussed. Seated *(l. to r.)*: R. Cowles, Marathon-Green Bay; J. Spalding, Marathon-Menasha; F. Nienow, Marathon-Menasha. Standing: B. L. Hammill; E. D. Beachler; H. W. Gochnauer, Marathon-Menasha; R. Robilliard, Marathon-Green Bay.

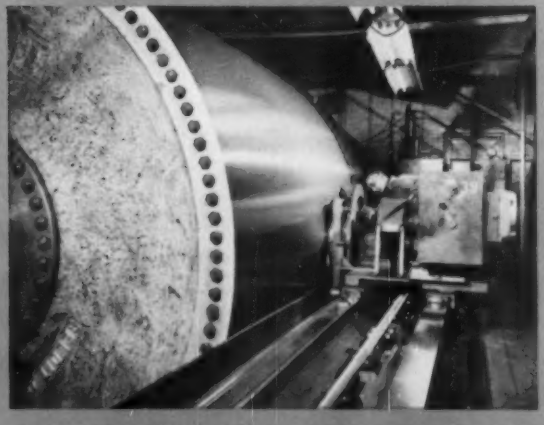
RADIOGRAPHIC INSPECTION includes use of Radioisotope Cobalt 60 in foundry quality control at Beloit Iron Works. Castings are being checked in the above setup, one of the standard procedures to insure continuous improvement in Beloit casting quality and design.

BETAMETER in Beloit's research and development department, operated by J. F. Atkins, measures variation in basis weight of sheet samples taken from Beloit machines running in the field. Testing of this type is only one phase of Beloit's never-ending design development.

READY TO ROLL: E. Lindberg *(center)*, master mechanic, and J. Rouman *(right)*, chief engineer, Combined Locks Paper Co., are shown by R. R. Olson, chief of Beloit's service department, how dryers are tested and loaded on flat cars for safe delivery to the mill. (See next page.)



FAST FOOTWORK and skill on the part of machine tenders is required in the eagle-eye process of starting up. Above, operators are shown "passing the tail" from dryer section into the calender of the new Beloit 252" Fourdrinier Board Machine at Rome Kraft Co., Rome, Ga.



PRECISION PLUS: B. R. Martin's years of experience have made him a versatile grinder operator. Not only does he operate the Yankee dryer grinder at Beloit, but he is a familiar figure in Beloit customers' mills, doing grinding work on all types of rolls and dryers.

your partner in papermaking

BELOIT

PAPER MACHINERY

BELOIT IRON WORKS · PAPER MACHINERY · BELOIT, WIS., U.S.A.

WHEN YOU BUY BELOIT . . . YOU BUY MORE THAN A MACHINE

J. W. MILLER

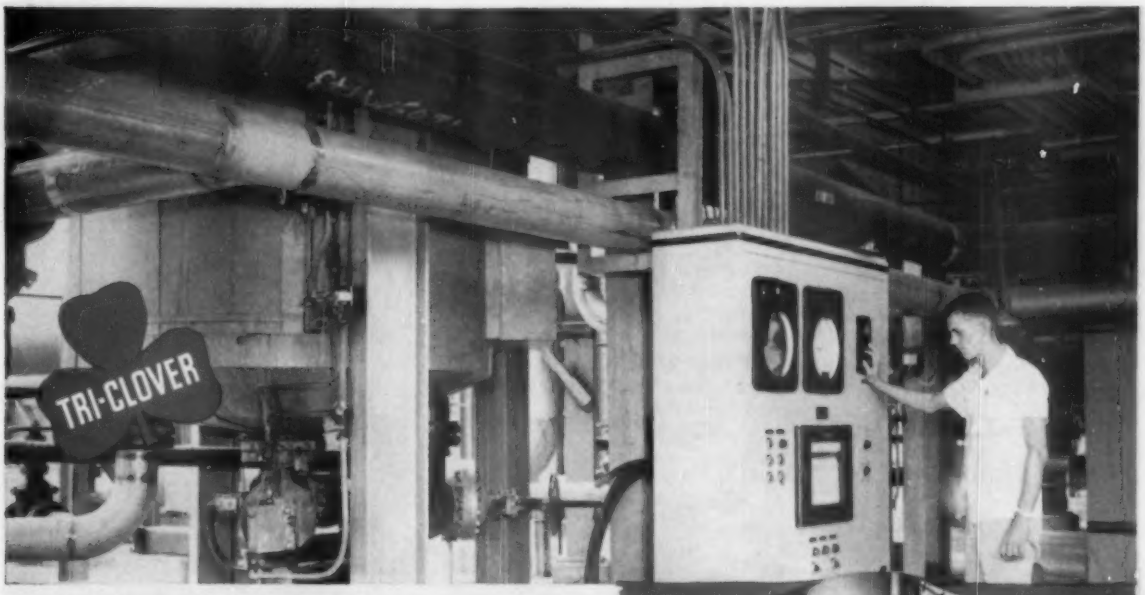
IT'S A BIG JOB, loading a Yankee dryer, but Beloit's shipping department has yet to be baffled by a behemoth. A 12-foot Yankee like the one above has a total weight of 92,000 pounds and must be placed on a flat car with exacting care. A 75-ton bridge crane lifts the huge cylinder from the adjacent Yankee dryer grinder and places it in line on the car. The dryer is then moved inch by inch until it is centered and balanced. Heavy steel bands are passed over the shell and journals and bolted down to prevent forward or lateral movement. Each time a Yankee is shipped, special arrangements must be made with the railroads, since a Yankee dryer loaded on a car measures 16'-5" from rail to clearance and is over 12 feet wide. Each Yankee must be specially routed to avoid any obstructions along the right-of-way.

your partner in papermaking

BELOIT

PAPER MACHINERY

WHEN YOU BUY BELOIT . . . YOU BUY MORE THAN A MACHINE



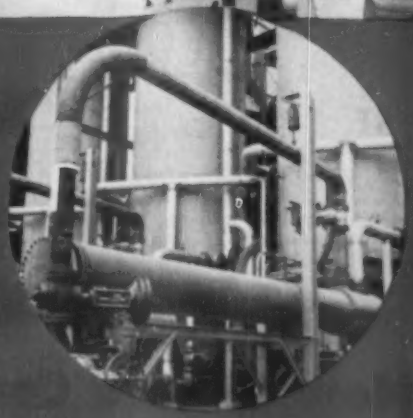
Ultra Modern Cellulose Mill Makes Wide Use of TRI-CLOVER Stainless

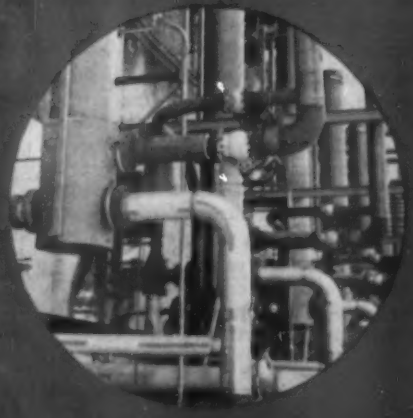
Sixteen thousand feet of stainless steel piping—that's what it takes to handle the acids and other corrosive liquids used in processing at Buckeye Cellulose Corporation's new plant at Foley, Florida.

"Buckeye Cellulose", which is a subsidiary of Procter & Gamble Company, built the ultra-modern dissolving pulp mill for the production of several grades of high quality cellulose pulp.

To protect the quality of the cellulose, only the most highly corrosion-resistant materials were used in the processing operations. And that's where Tri-Clover enters the picture. Tri-Clover stainless steel piping and fittings, widely used throughout the new plant, provide full corrosion-resistance to "cooking liquors" and other acids and provide the maximum degree of protection against product contamination.

Tri-Clover experience and facilities helped Buckeye Cellulose solve its problems of corrosion in the planning stage . . . with a complete line of highest quality stainless steel fittings, pipe and tubing, plus experienced engineering service. We are extremely well qualified to help solve your corrosion-resistant problems whether in the planning stage or plant operations.





Shown above and below are part of the Tri-Clover stainless steel piping and fittings installed at the Buckeye Mill. The circular views show high acid content lines to digesters. Large view at top shows part of piping in digester operating control room.

LADISH CO.
Tri-Clover Division
Kenosha Wisconsin

TRI-CLOVER

See your nearest Tri-Clover Distributor
Export Dept., 8 So. Michigan Ave.,
Chicago 3, USA

1455

New CRANE Corrosion-resistant valves in 18-8 SMo and Craneloy 20

Gate, Globe, Angle and Check Patterns

Few valves for process industries have ever received the quality treatment given this new Crane line—at prices you'll find O.K.

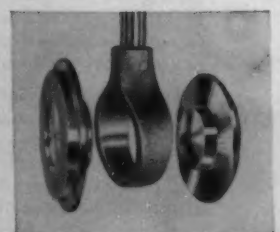
Note, for instance, the unique yet simple split-wedge disc construction in the gate valves. Those dual identical discs are free to rotate in their holder—the most effective design for resisting galling. The trunnion shape at the back of each disc assures even distribution of closing forces. You couldn't buckle them if you tried.

The globe and angle valves give equally outstanding control of corrosive fluids. A new type disc-stem connection, with minimum clearances, practically eliminates vibration. By placing seating load closer to seats, it provides easier, more accurate closure.

Check valves feature compact, thoroughly proved, non-slamming design.

Throughout, these valves are built for better service in your choice of Crane 18-8 SMo Stainless Steel or Craneloy 20. Both lines come with screwed or flanged ends.

ASK FOR THIS CATALOG—Full information including service suggestions given in circular AD-2080—available from your Crane Representative or by mail. Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers everywhere.



New split-wedge disc in gate valves combines the benefits of free rotation with uniform seat load pressure.

CRANE CO.

VALVES · FITTINGS · PIPE
KITCHENS · PLUMBING · HEATING

CRANE'S FIRST CENTURY...1855-1955

You can rely on

PENNSALT CHEMICALS

WESTERN MADE FOR WESTERN TRADE

PENNSALT Chemicals are made in the West for Western industry. It means a wide range of chemicals right at your doorstep, fast delivery by rail and water and big savings in freight rates. Our plants and offices in the West are as near as your telephone. For quick action in ordering and for our engineering service, phone the nearest plant or office.

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INDUSTRIAL CHEMICALS

For water sanitation and sewage disposal:

Chlorine, liquid
Anhydrous Ferric Chloride
Perchloron®
Anhydrous Ammonia

For textile processing:

Caustic Soda
Chlorine and Sodium Hypochlorite
Clor Liquid Bleach

For pulp and paper operations:

Anhydrous Ammonia
Bleaching Powder
Caustic Soda
Chlorine
Sodium Chlorate

For glass and ceramics production:

Calcined and Hydrate Alumina
Hydrofluoric Acid (aqua)
Kryolith®
Acids, Muriatic and Sulfuric

For pickling and refining of primary metals, finishing of fabricated metal parts:

Anhydrous Ammonia
Calcined Alumina
Kryolith® and Rimflux
Sulfuric and Muriatic Acids
Sal Ammoniac

For production of chemicals and allied products:

Caustic Soda
Chlorine
Sulfuric Acid
Sal Ammoniac
Sodium Chlorate
Potassium Chlorate

For petroleum refining and petro-chemicals:

Acids
Ammonia
Caustic Soda
Chlorine
Anhydrous Hydrofluoric Acid

AGRICULTURAL CHEMICALS

For spraying cattle and livestock:

Penco® Cattle Spray (DDT)
Penco® BHC W-12
Penco Lindane W-25

For fruit and citrus crops and shade trees:

Penco DDT W-50
Penco Parathion W-25
Kryocide® (natural cryolite)
Penco Malathion formulations

For pest control in buildings and on the farm:

Penco Hi-Gam E-20 and W-25

For truck crops, corn, and forage:

Penco DDT W-50
Kryocide®
Penco Parathion W-25
Penco Lindane W-25
Penco DDT Emulsion 25 and 34
Penco BHC E-11
Penco Endothal Desiccant
Sodium Arsenite
Calcium Arsenate
Hi-Gam W-75 Seed Treater

Cotton Defoliants:

De-fol-ate
Endothal Defoliant S-4069

For aerial spraying of forest insects:

Penco Forest Insect Spray

Weed Killers:

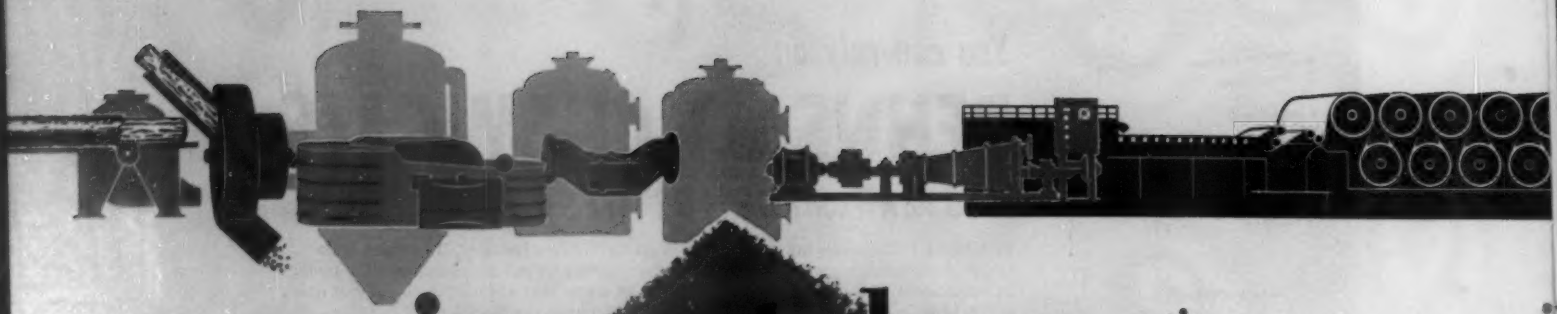
Penite 6X and 35
Sodium TCA (90% wettable powder)
Sodium Chlorate

Technical products for compounders:

Penco DDT, BHC, parathion, malathion, lindane, and other technical insecticides, fungicides, and weed killers.

PENNSYLVANIA SALT MANUFACTURING CO. OF WASHINGTON
TACOMA 1, WASHINGTON

Pennsalt Chemicals



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* In printing, this red symbol ^ means "insert at this [illegible] you follow it in paper making by installing EMERSON [illegible]s as pre-refiners before the Jordans, you can expect ou[illegible]ng results.

In paper mills CLAFLIN performance assures greater tonnage of higher quality pulp, more economically produced in all grades of stock. Along with these advantages, CLAFLINS are capable of increasing by three to four times the beating production in tons per day. Reductions of from one quarter to one half in power consumption also are possible.

In pulp mills CLAFLINS minimize the quantity of screen rejects when used as defibrators after the blow tanks and preceding the washers. Foaming is eliminated since no air can enter the closed system.

With fillings designed for all types of primary refining and beating operations, CLAFLINS are accepted as the most versatile refiners in operation today.

CLAFLINS are now made by EMERSON, a name synonymous with precision craftsmanship in stock refining equipment.

Claflin CONTINUOUS BEATERS AND REFINERS

THE EMERSON MANUFACTURING COMPANY

Division of John W. BOLTON & Sons, Inc.

Lawrence, Massachusetts, U. S. A.

Bolton reports its first half century

This booklet, containing the memoirs of the first fifty years of John W. Bolton & Sons, Inc., is yours for the asking.

It commemorates our golden anniversary by recording what is, perhaps, a typically American experience of struggle, growth, and education.

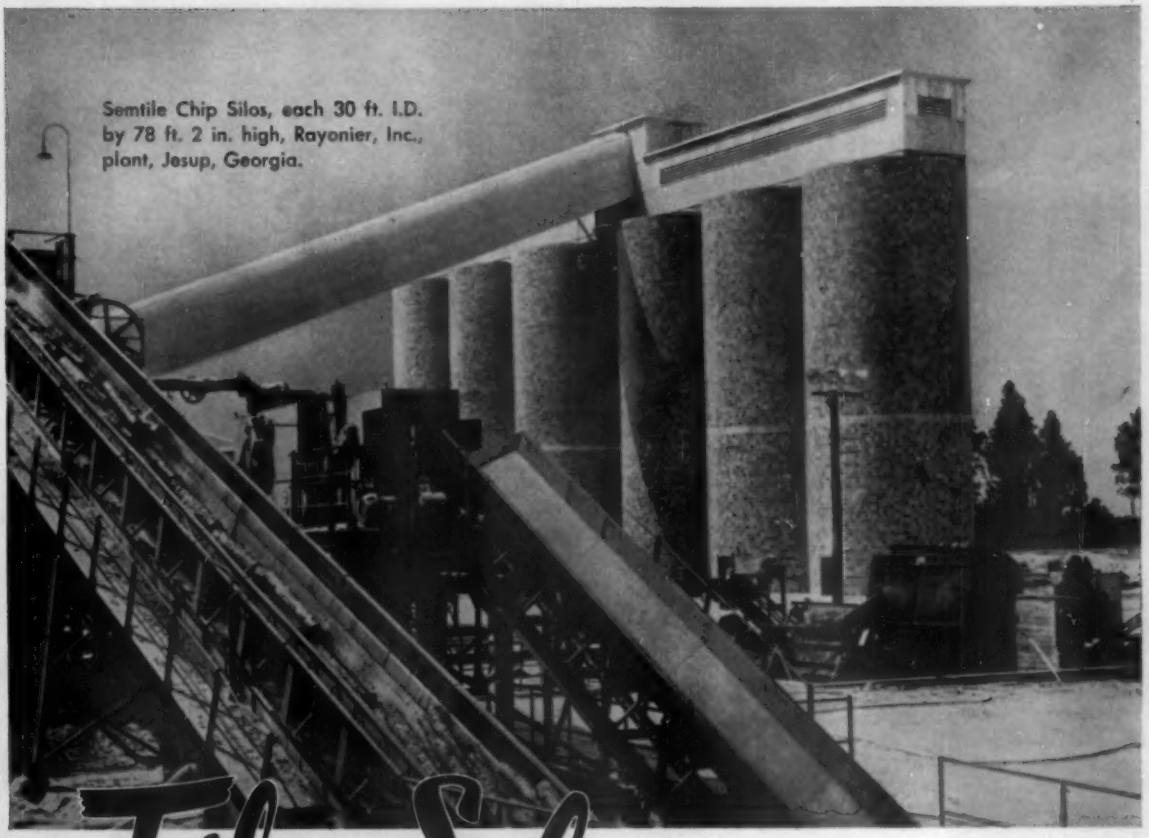
To us in the Bolton organization, the education gained in a half century of service to the pulp and paper industry is the most important measurement of our success. For it makes us better prepared to keep pace with the swiftly changing conditions brought about by new methods, new materials, and scientific developments in paper manufacture.

We enter our second half century with confidence in our continued ability to lead the way with better equipment and with improved service based upon intelligent understanding of our customers' needs.

John W. BOLTON & Sons, Inc.

Lawrence, Massachusetts, U.S.A.

For a copy of our anniversary booklet, write to Dept. S, John W. Bolton & Sons, Inc., Lawrence, Mass.



Semtile Chip Silos, each 30 ft. I.D. by 78 ft. 2 in. high, Rayonier, Inc., plant, Jesup, Georgia.

Tile Silos

for Storage of Dry Materials

These enormous chip silos, engineered and erected by Stebbins, are steel-reinforced concrete faced inside and outside with vitrified tile. No forms were required—a Stebbins construction method that results in substantial savings.

If you require facilities for storing materials—dry or wet—in large or small quantities—it will pay you to get Stebbins' recommendation. Or if you need corrosion-resistant process vessels, Stebbins' unequalled experience and facilities for the application of linings and the construction of tile can be extremely valuable to you.

Write for Bulletin A-153

SINCE 1884
Specialists in Design Installation and Servicing of Linings and Tile Tanks

SEMCO

STEBBINS

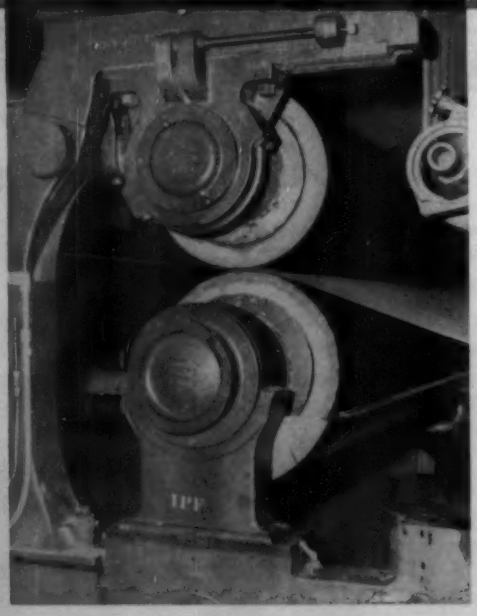
Engineering and Manufacturing Company, Watertown, N. Y.

STEBBINS ENGINEERING CORP. - 1504 TOWER BLDG., SEATTLE, WASH.

CANADIAN STEBBINS ENGR. & MFG. CO., LTD. - CASTLE BLDG., MONTREAL, CANADA

Carbon Paper Tests Prove the Case for

BLACK-CLAWSON CROWNLESS PRESS ROLLS



Recent comparative field tests, the results of which are shown above, involved the use of pairs of conventional press rolls and pairs of B-C Crownless Press Rolls. The procedure was to lay carbon paper between two strips of graph paper and set the top roll down at various pressures to make visible nip impressions.

The differences in nip patterns between conventional press rolls and Black-Clawson Crownless Rolls tell an amazing and interesting story—actually prove that only Crownless Press Rolls can give you uniform nip pressure, uniform water removal and uniform felt wear.

Bulletin 8-BC describes these tests and contains comparative nip impression readings, nip patterns, construction details and other advantages of Black-Clawson Crownless Press Rolls.

Write for Bulletin 8-BC today.

THE BLACK-CLAWSON COMPANY

BLACK-CLAWSON DIVISION • HAMILTON, OHIO

PUGET PULP—the *whitest, cleanest, bleached sulphite pulp* that we can make is produced *particularly for the market.* To assure converting mills of top quality, Puget management is always testing new processes, always alert to improved methods, always ready to install new designs in equipment. *Gear your operations to* ***PUGET PULP.***

PUGET SOUND

PULP AND TIMBER COMPANY

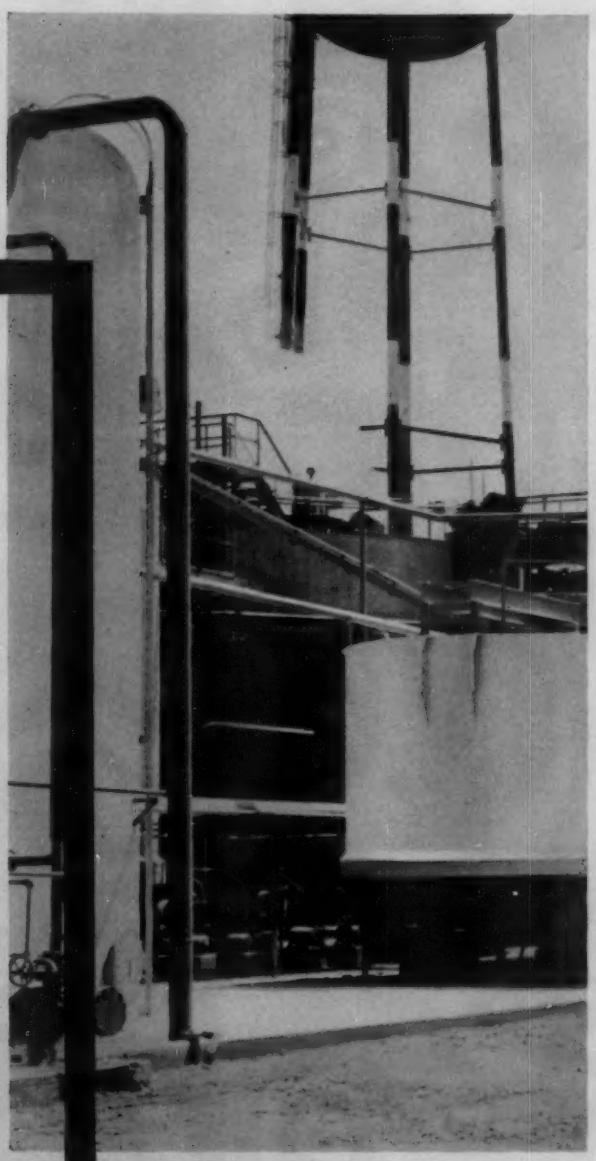
BELLINGHAM • WASHINGTON

New Development

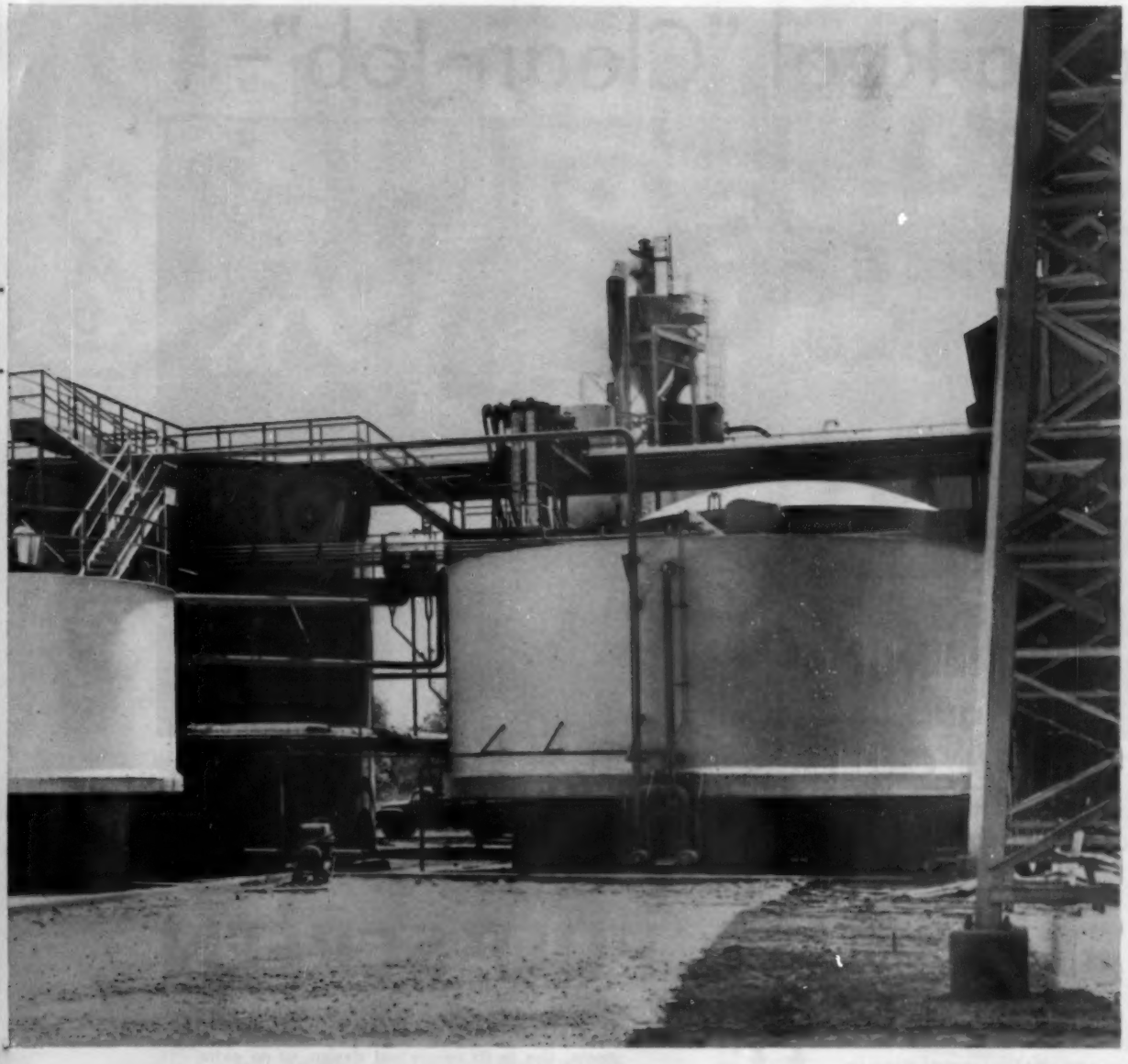
in Dorr Continuous Recausticizing System

Substantially Reduces Initial Costs...

Simplifies Operation



Latest development in Dorr Continuous Recausticizing is embodied in the Green Liquor Clarifier and Dregs Washer shown in the photograph above. Installed at the Valdosta, Georgia mill of National Container Corporation, the units incorporate a new principle which makes possible a saving of up to 50% in mechanism and tank costs. Instead of multiple compartments served by separate mechanisms, each unit now consists of a single compartment with one mechanism and incorporating a large diameter deep feedwell extending well down toward the bottom of the tank.



The ratio of depth to tank diameter is adjusted to bring into balance the various functions essential to good clarification. Hydraulically, the flow patterns produced are controlled to make maximum utilization of overall tank volume.

This recently proven principal of Selective Density Feeding as applied to the Dorr System means substantially lower investment costs, lower maintenance costs, and simplified operation. In existing Systems the green liquor station can be converted to this new unit design and in most cases will give equal performance to that of tray units with the added advantage of greatly simplified operation.

The remainder of the Dorr System at Valdosta is standard in all respects and includes two Oliver Lime Mud Filters, both 6′ diameter by 6′ face.

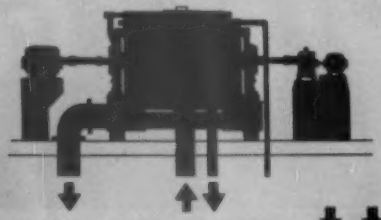
If you'd like more information on these new developments in the Dorr Continuous Recausticizing System, write Dorr-Oliver Incorporated, Stamford, Conn. In Canada, 26 St. Clair Ave. E., Toronto 5.

DORR-OLIVER
INCORPORATED
WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT
STAMFORD • CONNECTICUT • U.S.A.

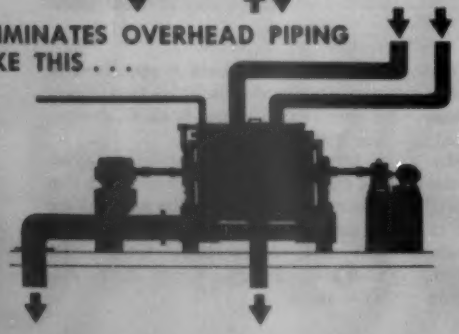
For a Real "Clean Job"–

both in SCREENING and in LAYOUT!

INSTALLED LIKE THIS . . .



ELIMINATES OVERHEAD PIPING LIKE THIS . . .



IMPCO®

IMPCO LINDBLAD PULP SCREEN

As a top performer in pulp screening, the Impco Lindblad has many outstanding features. For instance, due to its unique vat design, at no extra cost to the mill, sub-floor piping is possible. This means significant savings in piping expense on the runs for inlet and outlet piping. The neat arrangement provides uncluttered tending aisles and requires minimum floor space in either single or multi-screen installations.

These higher density type vibrating units are delivering quality pulps at densities above 1.5% A.D. in bleached, unbleached, semi-chemical and board mill installations.

For complete information on this screen, send for Bulletin B4-1.

IMPROVED MACHINERY INC.
NASHUA, NEW HAMPSHIRE

SHERBROOKE MACHINERIES LIMITED, SHERBROOKE, QUEBEC
Manufacture Similar Equipment in Canada

NATIONWIDE!

"DOMINION" MACHINES & SPARE PARTS

CHOOSE "Dominion" machines for long service and sustained high out-put. They are fully convertible from shovel to pull-shovel or crane (with dragline, clamshell, pulpwood grapple, pile-driver or magnet). Select the *mounting* you need,—crawler, truck or rail, in sizes from ⅜ to 2 cu. yds. Powered by gasoline, electric or diesel engines with power matched for peak efficiency with full economy. Dominion field and factory service is nationwide.

MONTREAL: Power Crane & Shovel Division, Dominion Engineering Co. Ltd., Phone: NElson 5-1180

HALIFAX: Industrial Machinery Co. Ltd., 163 Upper Water St., Phone 3-1306

MONCTON: Lounsbury Company Limited, 15 Bacon Street, Phone: 4-4451

FREDERICTON: J. Clark & Son Limited, 123 York Street, Phone: 5561

QUEBEC: 524 Montpelier Street, St. Foy, Que., Phone: Quebec—7-3036

TORONTO: Power Crane & Shovel Division, Dominion Engineering Co. Ltd., 1303 Yonge Street, Toronto 7, Phone: WAlnut 4-8164

WINNIPEG: Mumford, Medland, Limited, 576 Wall Street, Phones: 37180, 37187, 37188, 37189

REGINA: Mumford, Medland, Limited, 5-6 Westman Chambers, 1791 Rose St., Phone 31740

SASKATOON: Mumford, Medland, Limited, 130 Avenue "A" North

CALGARY: Power Crane & Shovel Division, Dominion Engineering Co. Ltd., 803 24th Avenue S.E., Phone: 5-5634

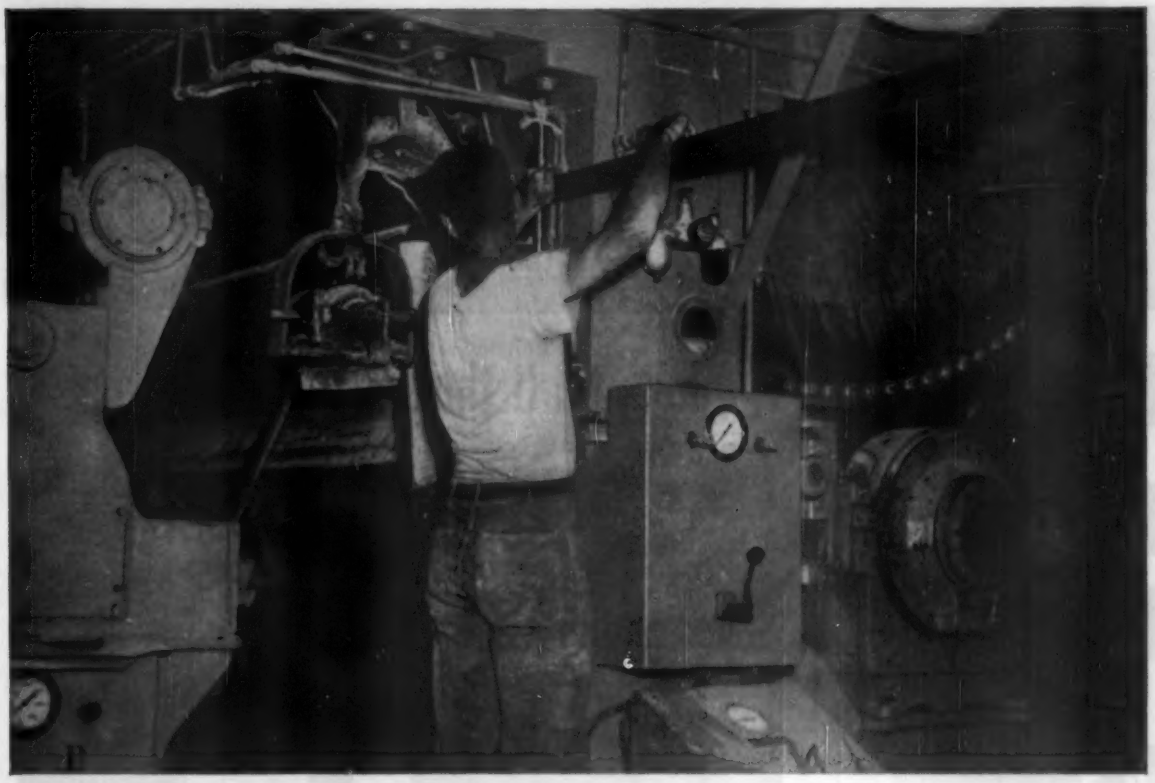
VANCOUVER: Power Crane & Shovel Division, Dominion Engineering Co. Ltd., 675 West Hastings Street, Phone: MArine 9529

DOMINION ENGINEERING

COMPANY LIMITED

· POWER CRANE AND SHOVEL DIVISION ·

HALIFAX MONCTON FREDERICTON QUEBEC MONTREAL TORONTO WINNIPEG REGINA CALGARY VANCOUVER



No bolts, no clamps. Doctor blades on this dryer are held in place by spring tension, can be changed quickly and with minimum loss of production. Makers of the blades, LODDING ENGINEERING CORP., Worcester, Mass., recommend "K" Monel because of its excellent resistance to corrosion, abrasion and wear.

Why you don't have to do this very often —when you use blades of "K" Monel

The paper on this Yankee dryer is running at 1400 feet a minute.

Changing doctor blades frequently *could* add up to a tremendous loss of production.

But blades like these don't have to be changed often. They're made of "K"® Monel. They run 2 to 5 hours between regrinds, depending on the paper you're making. *And they last lots longer than most blades.*

Why? Because "K" Monel is an extra-strong, extra-hard nickel alloy. It has excellent resistance to wear and corrosion. Stands up on the really tough jobs.

For creping heavy paper and specialties, for use against dryer and flaker rolls, or hard rubber covered rolls, "K" Monel blades keep production up, hold costs down. And no wonder! *Their surfaces stay smooth, and wear uniformly. They leave your rolls clean and unscored. Prevent fiber buildup. End scratching.*

Put "K" Monel at the top of your list for corrosion-resisting, long-wearing doctor blades. "K" Monel is one of a family of long-life alloys which include Monel and Inconel.

"K" Monel doctor blades are available from the LODDING ENGINEERING CORP., Worcester, Mass. The firm specializes in doctor blades and holders. *Write them — Dept. K — for more information.* And, of course, write *us* any time you need help in picking the right metal for a corrosive job in your pulp or paper mill.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.

INCO TRADE MARK **Nickel Alloys**

"K" Monel . . . for longer life

7 BIG REASONS WHY Bingham STANDARD EQUIPMENT

1. **"Double Volute"** permits use of special over-hung impellers for handling pumpage containing large volumes of *entrained air.*

2. **Extra case strength** resulting from tension member in **"Double Volute"** casing.

3. **No dilution.** Hydraulic Radial Balance resulting from "Double Volute" design permits shaft to rotate on true center reducing stuffingbox leakage to a minimum.

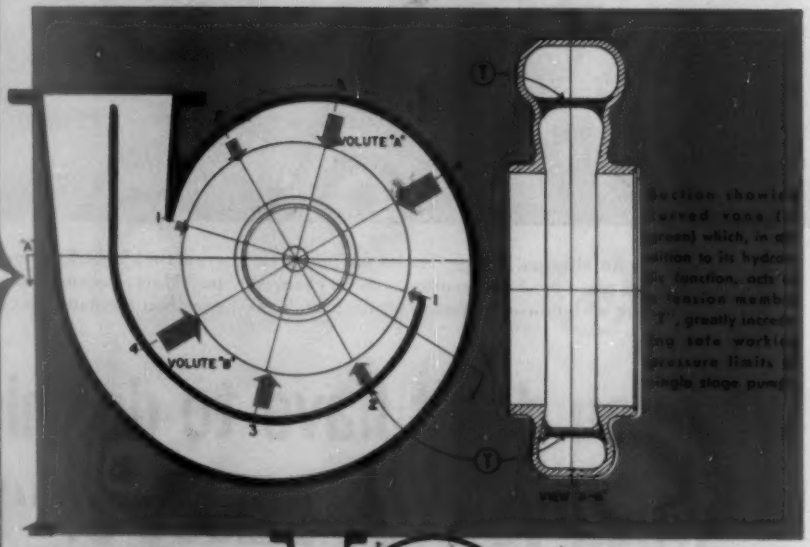
4. **Mechanical Seals.** Hydraulic Radial Balance permits mechanical seals to establish and maintain a uniform track between the contacting faces, thereby insuring long life and trouble-free service.

5. **"Double Volute"** construction eliminates "side push" of rotating element, reducing maintenance of rotating and stationary parts to a minimum.

6. **Unit type bearing** and rotating assembly is easily removable for inspection or repair without disturbing piping or driver.

7. **High operating efficiency.**

The Key to all these Benefits is the *Bingham* "Double Volute" Design



No "Side Push". Diagram of a "Double Volute" single discharge case of single-stage pump (above) showing the equal pressure on the opposite sides of impeller, insuring low maintenance.

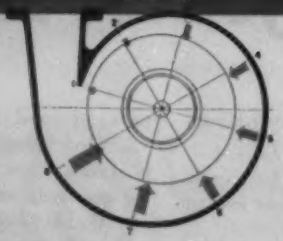


Diagram of "Single Volute" pump case (left) showing unequal pressure at opposite points around the periphery of the impeller. These unequal pressures cause "SIDE-PUSH" on the rotating elements, causing wear of rotating parts and, frequently, high maintenance.

NEW MAJOR MILLS recently placed in operation, or currently under construction, equipped throughout with Bingham "Double Volute" Pumps.

BUCKEYE CELLULOSE COMPANY
Foley, Florida

COLUMBIA CELLULOSE CORP.
Prince Rupert, B. C.

E. TEXAS PULP & PAPER
Evadale, Texas

KETCHIKAN PULP & PAPER
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MacMILLAN & BLOEDEL, LTD.
Nanaimo, B. C.

RAYONIER, INC.
Jesup, Georgia

SCOTT PAPER COMPANY
Everett, Washington

TASMAN PULP & PAPER
Auckland, New Zealand

WESTMINSTER PAPER CO.
Westminster, B. C.

WEYERHAEUSER TIMBER CO.
Everett, Wash. & Longview, Wash.

POWELL RIVER PAPER CO.
Powell River, B. C.

CROWN ZELLERBACH PAPER CO.
Duncan Bay, B. C.

BINGHAM PUMPS TODAY ARE SERVING OVER 300 PULP AND PAPER MILLS

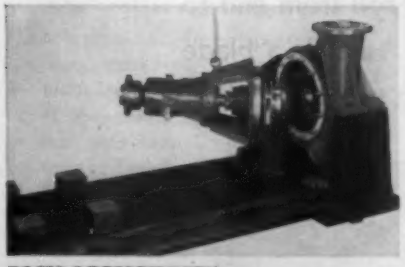
"DOUBLE VOLUTE" PUMPS ARE IN LEADING PULP and PAPER MILLS

In leading pulp and paper mills today Bingham "Double Volute" Pumps are selected as *standard equipment* because of their consistent record over the years for continuous operation with minimum maintenance.

The CF Bingham pump illustrated below, for example, has established an enviable record for dependability and low maintenance in hundreds of pulp and paper mills — but no more so than a dozen other types of Bingham Pumps now serving the pulp and paper industry.

There are more Bingham Digester Circulating Pumps now in use and on order than the total number of pumps of all other makes used for this service.

Bingham CF "Double Volute" Process Pumps mounted on floating base, used in digester circulating systems.



EASY ACCESSIBILITY

Bingham Type CF Process Pumps feature unit type bearings and rotating assembly which is easily removable for inspection or repair.

Bingham "Double Volute" Pumps will best serve your pulp and paper mill operations, as they are now serving leading pulp and paper mills everywhere. Write to your nearest Bingham office for "Double Volute" Bulletin, or send data on your pumping problem.

Bingham PUMPS
SINCE 1921

DOUBLE VOLUTE RADIAL BALANCE

BINGHAM PUMP COMPANY
General Offices: 2800 N.W. Front Avenue, Portland 10, Oregon
Factories: Portland, Ore. • Vancouver, B.C., Canada

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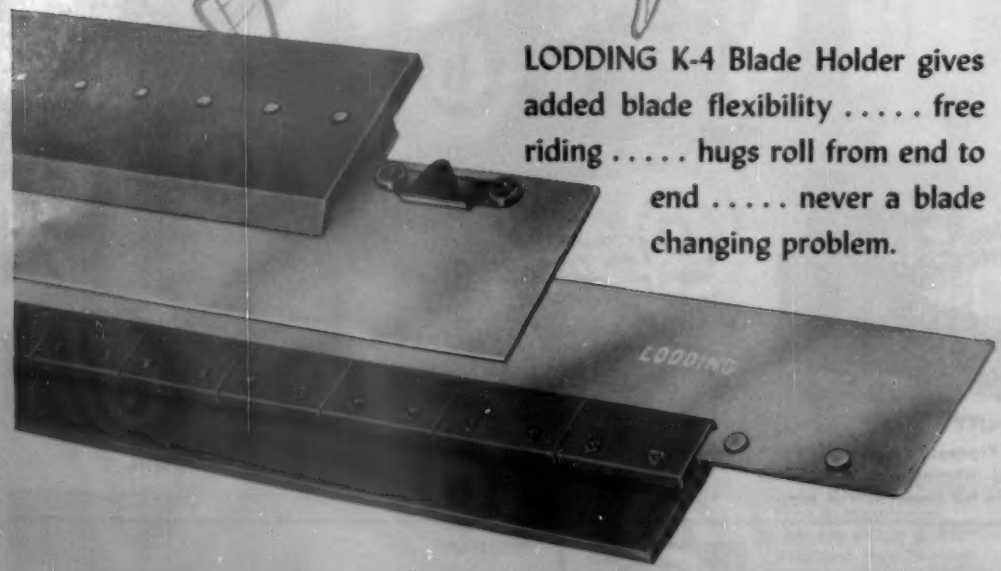
LIGHT TOUCH

CLEAN ROLLS



LODDING K-4 Blade Holder gives added blade flexibility . . . . . free riding . . . . . hugs roll from end to end . . . . . never a blade changing problem.

LODDING DOCTOR

LODDING ENGINEERING CORPORATION • Worcester, Mass.

caustic soda—

which strength should you buy?

Here are the facts to help you decide which saves you more—50% or 73%

Can you save by switching from 50 to 73% liquid caustic? Your answer will depend on:

1. Your caustic soda freight rate.
2. Your facilities for handling caustic.
3. The amount of caustic you use.

Advantages of 73% liquid

1. With 73%, there is a substantial saving in freight charges. 63% less water is shipped per unit weight of dry caustic soda.
2. You will place fewer orders. This cuts down on your billing work.

Disadvantages of 73% liquid

1. It is priced $2.00 more per ton (dry basis) than 50% because of higher manufacturing costs.
2. If you store it as 73% liquid, you will need heated, nickel-clad steel storage tanks.
3. If you dilute 73% to 50% while unloading, you will need a cooler and other equipment. This represents a considerable investment which can be reduced if you have suitable equipment already on hand.

Use this table to see if you can save with 73%

Use the table at right to find your approximate saving on freight charges with 73% liquid caustic. The table balances two cost factors . . . lower freight charges and the higher initial price of 73% liquid caustic.

To estimate your yearly savings, multiply the figure in the right-hand column which applies to you by your annual consumption in tons (dry basis).

From these savings you will have to deduct the cost of equipment for diluting to 50% while unloading.

Freight rate per hundred weight in cents (including taxes)	*Net savings per ton (dry basis) in dollars*
5	minus 1.40
10	minus .80
15	minus .10
16	0
20	.60
25	1.20
30	1.80
35	2.40
40	3.00
45	3.70

HERE'S HELP—WITHOUT COST

You gain much by choosing the *right* strength for your conditions. In coming to a decision, why not give yourself the advantage of unbiased expert technical help? A call to your nearest Hooker sales office puts at your disposal, without obligation, the experience gained in 50 years of supplying caustic soda to industry.

Your Hooker technical service man can show you what equipment you need for converting, and help you figure your exact savings. Why not phone or write him today at the nearest Hooker office?

* * *

"CAUSTIC SODA BUYER'S GUIDE" is the title of a new pocket-size booklet we will be glad to send you. Contains helpful facts on the economics of 50% and 73% solutions; other forms of caustic soda; capacities of tank cars and other containers; useful shipping information. Write for a copy.

HOOKER CHEMICALS

4-1954

1905—Half a Century of Chemicals from the Salt of the Earth—1955

HOOKER ELECTROCHEMICAL COMPANY

2 UNION STREET, NIAGARA FALLS, N. Y.

NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES

INCREASED YIELD OF USABLE FIBERS

With the Sutherland Breaker Trap . . . the *only* machine specifically designed for *selective* defibering of paper pulp. This versatile machine is unique in principle, simple in operation, low in cost.

Available in 2 sizes—12″ and 18″ rotor diameter—the Sutherland Breaker Trap fills a badly neglected gap in pulp preparation equipment. It has many applications for mills making either corrugating medium or paper board from waste papers and in pulp and paper mills.

ONLY THE SUTHERLAND BREAKER TRAP OFFERS YOU:

- *A cleaner sheet* because it defibers pulps *selectively*. Waste materials like cellophane, dirt particles, etc., are separated from fiber and left intact so that they can be removed by standard screening methods. A cleaner sheet results.
- *Higher Pulp Yields* are the rule because the pulp is separated from the waste—not carried away with it. Fiber rejected by screens is negligible.
- *Protection* of itself and the equipment that follows the Breaker Trap is offered because centrifugal action removes large particles of both magnetic and non-magnetic tramp metal.

THE SUTHERLAND BREAKER TRAP IS NEEDED FOR SELECTIVE DEFIBERING

- Defibering Waste Paper
- Mixing Kraft wastes with virgin pulp
- Removing Tramp Metal
- Separating dirt, knots, shives, etc.
- High yield sulphite
- High yield sulphate
- Defibering broke

Cutaway shows how the Breaker Trap operates. Note the rugged construction for long, trouble-free service life that is typical of all Sutherland equipment.

THOROUGH DEFIBERING

The Breaker Trap is the only machine that concentrates the pulp in the working area, the only area where defibering can take place. This is done in two ways:

- *A pressure drop* of approximately 5 lbs. per square inch across the Breaker Trap holds back the pulp.
- *A unique hold-back design* at the discharge of the rotor and shell keeps the pulp in the working area.

. . . . . A CLEANER SHEET

LONG TACKLE LIFE

Wear takes place within the bars rather than on the ends. This makes the bars thinner but not shorter. Hence the operating gap between the shell and the rotor does not change appreciably and uniform operating characteristics are assured over the entire long service life.

NO SETTING REQUIRED

The Breaker Trap operates at a fixed gap. No setting or changes needed. Rotor and shell are of stainless steel for greater resistance to chemical and abrasive action.

LOW POWER

The 18″ Breaker Trap usually needs 50-200 connected horse power depending on the type of service. The 12″ uses proportionately less.

CONTROLLED TURBULENCE

A high degree of controlled turbulence takes place within the working area, causing the pulp to work against itself. There is no bar to bar contact to beat, tear, or shred the pulp.

THE SUTHERLAND BREAKER TRAP HAS MANY APPLICATIONS

WASTE PAPER

Larger pieces of Tramp Metal such as baling wire, nuts, bolts, and washers are removed directly. They are thrown out by centrifugal action of the rotor blades and by the fins that extend along the axis of the blades.

Smaller pieces of tramp metal like paper clips and staples that usually pass through with substantial quantities of fiber attached are carried into the working area of the Breaker Trap where all fiber is removed. They can then be screened without loss of fiber.

The paper itself is defibered efficiently and thoroughly. There is a minimum of lost fiber and a higher quality sheet results. Rubber bands, cellophane, excelsior, etc., pass through the rotors of the Breaker Trap uncut and are readily removed during the screening operation. This, therefore, means greater yields of cleaner pulp from waste paper. A typical sample screened through a 30 cut plate shows 94% usable fiber, 6% rejects in the form of dirt, rubber bands, cellophane, excelsior, paper clips, small staples, etc.

SUTHERLAND

REFINER CORPORATION
TRENTON 8, NEW JERSEY

MANUFACTURED BY VALLEY IRON WORKS CO., APPLETON, WISCONSIN

Your Experience +
The Experience of Others =
More Profitable Operations for You

¶ Papermaking, today, demands a wide variety of experience and know-how to meet the problems arising from the rapid growth of the industry in recent years.

¶ What better way is there to get experience and know-how than by sharing our knowledge with others insofar as the sharing is mutually profitable to everyone concerned? It is on that very concept of sharing that The American Pulp and Paper Mill Superintendents Association has operated to advantage since its founding in June 1919.

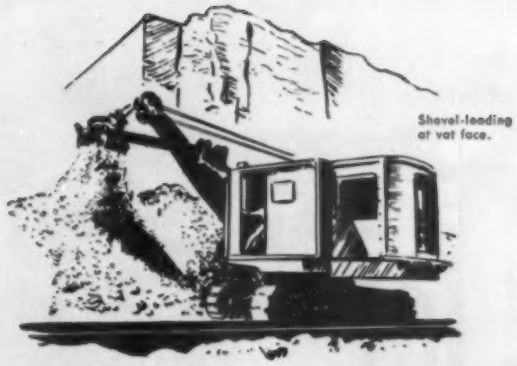
¶ An imposing list of pulp and paper industry experts and experts in the allied industry are to share their knowledge and know-how with the entire industry through their participation in the 36th Annual Convention of the Association.

The Convention, opening on the morning of June 14, 1955, and closing on the evening of June 16, 1955, will feature addresses and talks on dealing with people — both within and without the plant. There also will be many highly important papers for specialized group meetings on coating, paperboard, pulpwood, high-yielding pulping, engineering and maintenance, and paper machines. In addition, answers to numerous problems of immediate importance to mill executives will be sought in a forum session which is being arranged just for that very purpose.

¶ If you feel that you haven't all of the answers, and would like to learn what others may know, and possibly may desire to contribute something yourself, be sure to make arrangements now to attend the Convention.

Write or wire your hotel requirements today to the
NETHERLAND PLAZA HOTEL
Cincinnati, Ohio

The American Pulp and Paper Mill Superintendents Association
327 South LaSalle Street **Chicago 4, Illinois**



Shovel-loading at vat face.

Crude Sulphur

for Industrial Use

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Producing Units

- **NEWGULF, TEXAS**
- **MOSS BLUFF, TEXAS**
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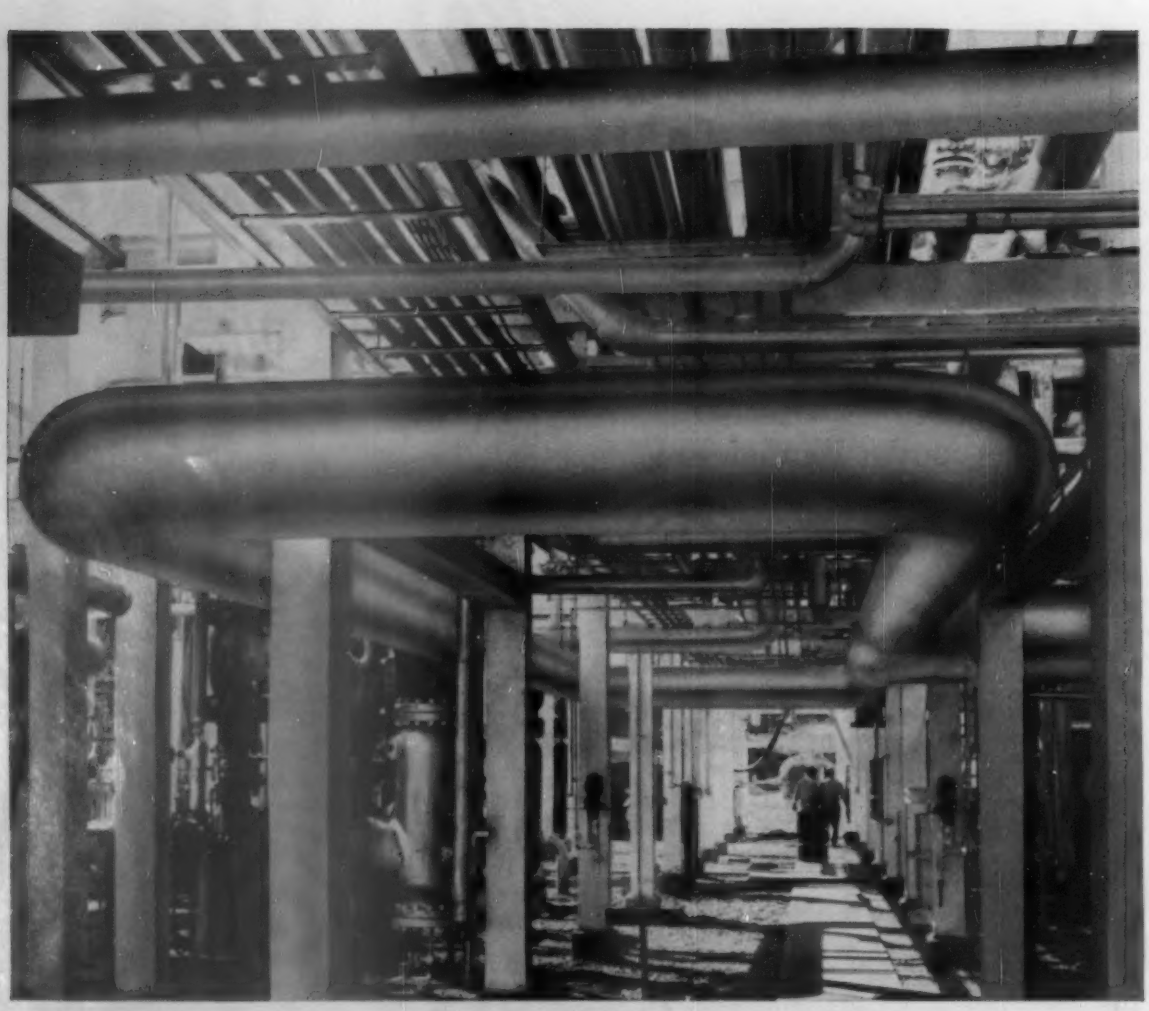
- **WORLAND, WYOMING**



Less heat loss at joints with single-layer Unibestos® Pipe Insulation

Tests prove that Unibestos single-layer pipe insulation actually provides greater protection than other nonfibrous *double-layer* insulations which cost more to install. Unibestos is made of Amosite—the long-fibered African asbestos. These fibers interlock with one another to prevent heat loss at horizontal and longitudinal joints.

While most insulating materials show a pronounced shrinkage at high temperatures, Unibestos has no measurable shrinkage at 1200°F. It will not powder, pulp or wash off, even under heavy moisture conditions, and when dry, Unibestos resumes its original thermal and physical characteristics.

EASY to install . . . easy to remove.

Unibestos can be cut, mitered and handled easily. The fabrication of insulation for tees, valves, flange covers, etc., is a fast, low-cost operation. Because of its unusual strength and durability Unibestos can be removed and replaced with little or no loss of material.

STANDARD PRODUCTION SIZES

Unibestos Pipe Insulation is regularly made in 3-foot lengths for pipe sizes from ½" through 24", in standard thicknesses through 5". Unibestos Block Insulation is made in 6", 12", 18" or 36" widths and in thicknesses from 1" through 3" in ½" increments.

For complete information, write for descriptive Bulletin 109C

UNARCO

UNION ASBESTOS & RUBBER COMPANY
1111 West Perry St., Bloomington, Ill.

ALL THESE ADVANCED HONEYWELL PLUS-FEATURES

simple—no mercury; few moving parts.

sensitive—rapid response to minute pressure changes.

wide range—continuously adjustable... from 0-20 to 0-200 inches of water; extended down to 0-14 for liquid level applications.

easy calibration—field-checked in minutes with weights; no tables or curves.

takes overloads—without impairing accuracy or parts.

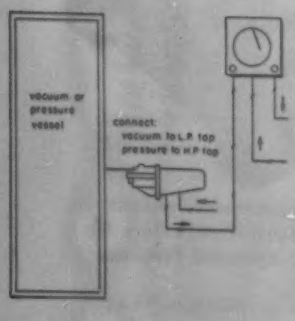
stands high temperatures—fluid up to 350 F. . . . ambient to 225 F.

needs little air—pilot relay model requires only 0.05 cfm.

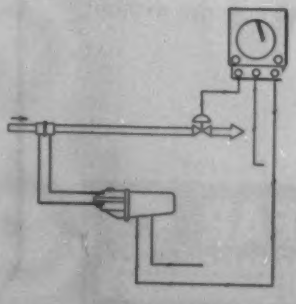
easy installation—compact, light, simply mounted anywhere.

resists corrosion—Teflon diaphragm and stainless steel body.

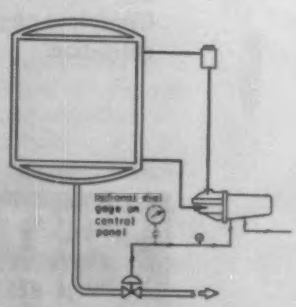
FOR VACUUM OR PRESSURE MEASUREMENT



FOR CONTROL OF FLOW



FOR CONTROL OF LIQUID LEVEL (CLOSED TANK)



# of B&W Recovery Units

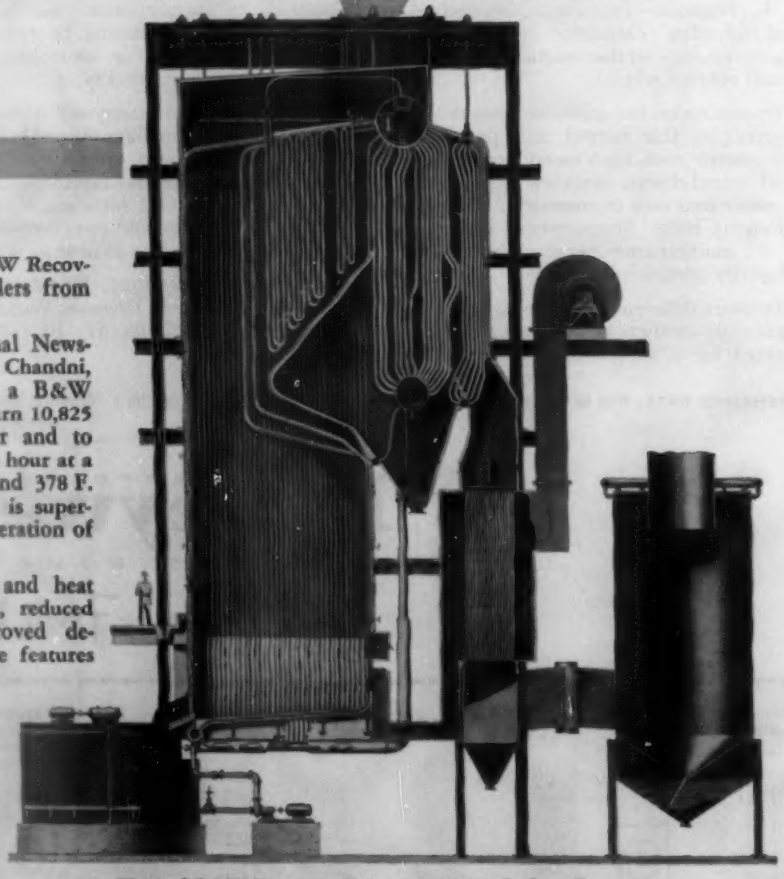
REPUTATION GOES A LONG WAY

... to India

World-wide confidence in B&W Recovery Units is indicated by orders from mills all over the globe.

Now on order for National Newsprint & Paper Mills, Ltd., of Chandni, Central Provinces, India, is a B&W Recovery Unit designed to burn 10,825 lb of black liquor per hour and to deliver 19,800 lb of steam per hour at a design pressure of 200 psi and 378 F. Ebasco Services Incorporated is supervising the installation and operation of this plant.

Highly efficient chemical and heat recovery, low-cost operation, reduced maintenance, and service-proved dependability, are some of the features responsible for a B&W reputation that is fast becoming known wherever pulp and paper mills operate. The Babcock & Wilcox Company, Boiler Division, 161 E. 42nd Street, New York 17, N. Y.



Typical B&W Recovery Unit with B&W Cyclone Evaporator

BABCOCK & WILCOX
BOILER DIVISION

P-773

Quiet Machine Room Here Soon?

Papermakers' dream of blissful noiseless mill is near. Machine men predict "battle of decibels" will be won

● This industry may be on the verge of discovering better means of eliminating its greatest noise source. PULP & PAPER reported exclusively in April that machine room noise abatement is a major 1955 project fostered by APPA leaders.

A new suction roll "silencer" is being tested on one of Canadian International Paper Co.'s biggest newsprint machines at Gatineau, Que., where A. W. Simpson is manager and G. D. Davidson, plant engineer.

By the time this article is published, Canadian researchers are convinced that paper can be made efficiently on a silencer-equipped open machine. The actual design by the National Research Council in Ottawa was not announced, pending patents, but it already had proved successful on a laboratory model suction roll. The commercial size installation is on one of four Gatineau 271½ in. Fourdriniers. The mill has two smaller machines, also.

Another type of silencer applicable only to machines equipped with vacuum transfer and tested on another Canadian machine with sheet running into the pit, was reportedly highly successful. It was to have a mill trial at Quebec North Shore Paper Co., Baie Comeau, on a high speed vacuum-transfer equipped couch.

A few newsprint companies such as Powell River Co. have been making independent tests to supplement the project undertaken by National Research Council at Ottawa.

The box-like structure which houses the silencer apparatus is a relatively small object installed in the couch and while it is said to be a long way from the complete answer to the problem of machine room noise, engineers say it is promising.

MACHINE BUILDERS AT WORK— Several machine manufacturers have attacked this problem. Engineers at Beloit Iron Works, for example, have used latest recording and experimental instrumentation both in extensive laboratory setups and in actual mill situations.

Seeking Peaceful Quiet

C. B. Dahl, Beloit Iron Works engineer, is shown with equipment used in noise abatement studies. In background can be seen a suction roll mounted on experimental press section. Section can operate at speeds in excess of 200 FPM.

A primary consideration was to determine the exact nature of the sound and to completely explore the fundamental physics of its generation. This has led to several successful mill corrections.

Development work on models at Beloit and on rolls running in the field has proved that noise energy can be reduced on the order of 6 to 20 decibels, which in some cases reduces the sound beneath the level of background noise.

Beloit engineers predicted to PULP & PAPER that in the near future machine room noise can be effectively controlled. The mills can throw away the cotton and the earmuffs!

U.S. Mill Takes Speed Record from Canada

● Fastest producer of newsprint in the world appears to be No. 1 machine, a Beloit 252-in. unit, recently broken in at Bowater's Tennessee mill in Calhoun.

A new record was set April 27 when the machine speed was increased from 1,720 fpm to 2,118 fpm in the remarkably short period of 3½ hours.

The 252-in. wide record breaking Beloit Fourdrinier machine has a suction pick-up arrangement and four sections of dryers, and is driven by a General Electric multi-generator sectional drive.

It is difficult to determine definitely just what was the top record prior to Bowater's achievement in Tennessee, but Powell River's No. 8 machine hit top speed of 2,001.5 fpm for a brief period last year on a test run. Most of the competition to Powell River's speed has been provided by machines at Canadian International Paper Co. at Three Rivers, and Quebec North Shore Paper Co. at Baie Comeau, Que.

G. R. Koons, of Bowater's Southern Paper Corp., wired PULP & PAPER that the performance of the Beloit machine at Calhoun confirmed the feasibility of manufacturing newsprint steadily in the speed range of 2,000 fpm in the not distant future.

Both Dominion Engineering newsprint machines ordered by Powell River Co. for its new expansion program and by St. Regis-North Canadian for their Hinton, Alberta, mill are being built with a view to exceeding 2,000 fpm.

Where and How This Industry Is Expanding

Powell River and MacMillan order machines; rumors Brown merges with Olin; South and Far West growth continues

• Canada moves right into the big "middle ring" this month, taking over the main spotlight with a veritable rush of new pulp and paper expansion projects.

And there is still lots of activity in the South and the Far West. The tempo of pulp-paper expansion has reached a rate that makes some of the biggest years of the past look like slow motion.

Here's what's happened in Canada:

POWELL'S NO. 9—Powell River Co. came through with a smash surprise announcement of a new No. 9 machine to increase its newsprint production by 25%—90,000 tons. Already Powell River, B.C., is the biggest single newsprint mill in the world, making 376,000 tons last year. Dominion Engineering will complete No. 9 by fall of 1956, designed for 2,500 fpm, with vacuum transfer. Powell is spending $20,000,000 on speed-ups and improvements. No. 7 is getting a vacuum transfer, already credited with increasing No. 8 production by 8,500 tons in the past year.

Sixth mill for Vancouver Island since World War II—B. C. Forest Products' 250-ton bleached kraft pulp operation—now is assured. A provincial forest management license has been granted. Howard Simons, Vancouver, B.C., is expected to be the engineer. Site probably will be Crofton, on Cowichan Bay. Pres. H. G. Munro says construction begins as soon as possible; anyway, no later than Sept. 1956.

Dryden Paper, Anglo-Canadian P & P subsidiary, has called for bids on new bleached kraft pulp mill at Dryden, Ont., costing $11,600,000, doubling output to 142,000 tons annually, of which 92,000 can be bleached.

Rayonier's new subsidiary Port Alice, B.C., mill will complete one-fourth of its $8,000,000 modernization-expansion this year, finishing the job in 1957, with capacity up from 220 to 350 tons a day bleached sulfite cellulose.

Having just completed a $5,000,000 expansion, bringing newsprint capacity to 75,000 tons a year, Richmond P & P, Bromptonville, Que., now is adding 5 grinders and speeding up a 162-in. Fourdrinier.

MACMILLAN EQUIPMENT CHOSEN—Beloit Iron Works is building a new 276-in. newsprint machine at rated speed of 2,500 fpm for MacMillan & Bloedel at Port Alberni, B.C.

A corrugated board machine isn't ordered yet, but plans for a semi-bleached kraft pulp mill addition at Port Alberni are going ahead, with Dorr causticizing, Allis-Chalmers lime kiln and Cowan screens ordered.

Incidentally, H. R. MacMillan, president of M & B, says it is apparent several other new pulp and paper mills in British Columbia will be launched in the next few years. Construction is starting on Crown Zellerbach's new kraft pulp mill at Duncan Bay, B.C., next month.

With capacity upped even before breaking ground, from 300 to 400 tons a day, the St. Regis-North Canadian Oils bleached kraft pulp mill at Hinton, Alta., will have a Dominion Engineering Fourdrinier-Minton type dryer and possibly other innovations.

Millspaugh Ltd., Sheffield, England, is building the new 122 in. Fourdrinier for Provincial Paper, Thorold, Ont. It will make book bond and groundwood free prints in weights up to 150 lbs.

Expansion programs are near completion at St. Lawrence's Red Rock, Ont., and East Angus, Que., mills, increasing newsprint capacity more than 20%, kraft pulp more than 66%. Millspaugh built a big kraft machine for East Angus, speed up to 1,800 fpm. New boilers and 4 new grinders started up at Red Rock.

Manitoba Paper is expanding. Plans for Anglo-Newfoundland's new Ontario mill are proceeding. Talk persists of a new big Newfoundland mill, also another Nova Scotia mill.

BOWATER TO BE BIGGEST—Bowater has set its sights on being the biggest newsprint producer in the world, a distinction it held until International Paper took over top position some years ago.

Production at Peak!

Never before in history have U.S. mills been making so much paper and board. In first quarter 1955, they made 7,177,000 tons, over previous record in 2nd quarter 1951 (Korean War) by 2½%. If continued, even with some tapering off, it means last year's record year—26,459,000 tons—would be beaten.

Bowater's annual report declares its "master plan for the next three or four years forms the biggest undertaking to which the organization—or perhaps any other in the paper industry—has ever set its hand, whether in the United Kingdom or anywhere else."

Expenditure of many millions of dollars is involved, some aimed at making Bowater's Newfoundland mill the largest integrated paper mill in the world. Less than a year ago Bowater completed its mill in Tennessee at a cost of $60,000,000.

Net profit of $36,667,296 for the 15-month period ended Dec. 31, 1954, was recently reported, with North American earnings totaling $17,043,035.

In the Newfoundland mill, 6 machines will be speeded up, 4 more grinders will be installed and a 6000 kw power plant is contemplated. Additional capacity will be provided at Mersey and Thames mills in the United Kingdom. A fleet of deepsea newsprint carriers is planned.

BIG PLANS IN SOUTH—In the South there are a dozen major expansion plans being pushed ahead as fast as possible. Bowater's big plans include the South, where it announced an ultimate objective of doubling capacity of the new Calhoun, Tenn., mill. Newsprint is being made there at an annual rate of 145,000 tons and kraft pulp at 60,000, whereas initial capacities a year ago were 130,000 and 50,000. By 1956, Calhoun newsprint output is scheduled to reach 175,000 a year.

International Paper has construction crews on the job for its first newsprint mill in the South at Mobile, Ala., with completion due next year. The 282-in. Beloit Fourdrinier will parallel present machines, make 300 tons a day.

U. S. Gypsum Co. is preparing to build a multi-million dollar plant on the Industrial Canal, in New Orleans. National Gypsum is planning a $6 million plant at Westwego, La., across the Mississippi from New Orleans.

BROWN — OLIN - MATHIESON MERGER?—Is the 550-ton kraft pulp, and board 5-machine operation of Brown Paper Mill Co. at West Monroe, La., going to be the next acquisition of the far-flung international Olin-

Mathieson Corp.? This is probably the hottest rumor in the South right now, a strong revival of the rumors of last fall.

PULP & PAPER went direct to the principals involved at press time—no comment. Most observers saw the merger as a "natural," as Olin-Mathieson needed a mill for best utilization of its vast forest holdings in the area. It needed more cellulose and Brown needed to find a way to avert big family inheritance taxes.

Morgan Stanley has offered new $15,000,000 Riegel Paper 25-year 3¾% sinking fund debentures and is underwriting a Riegel offering of 190,960 common shares to stockholders, proceeds of both to be used partly for a 33% expansion of the Riegel Carolina pulp mill at Acma, N.C., to cost $5,-800,000.

"Mum's the word" on several expansion programs in the South, but they are going ahead nonetheless at several mills. Rice Barton is building the new machine for Palatka, Fla. Gair is adding a 246-in. Fourdrinier at its new Hodge, La., mill. St. Regis announced a machine for Jacksonville.

RAYONIER'S NEW MILL—Timber will be the guiding factor in selection of the site for Rayonier's recently announced new 100,000 ton, $30,-000,000 pulp mill. James T. Sheehy, executive vice-president, gave dramatic impact to the news by selecting the directors' meeting in Paris for the announcement. Although the news was felt by some to be 60 days premature, they said the overseas timing probably held greater significance to Rayonier's overseas market.

Decision on site for the mill is up to the company's engineering and plant development group. Logical sites stressed by Mr. Sheehy are the Southeast, British Columbia or Alaska, with emphasis on the Southeast. Wherever it will be, it will add some $4,750,000 payroll to the selected community for an expected plant staff of probably 375 and office staff of 75, in addition to woods producers.

One observer guesstimated that Waycross, Ga., would be one logical location since it is near to Rayonier mills at Jesup, Ga., and Fernandina, Fla., where they have timber holdings. Another possibility, he added, might be Brunswick, Ga., where Rayonier owns a site.

STRAW MILL "BITES DUST"—Another strawpaper mill "bit the dust." Hinde & Dauch's Fort Madison, Ia., mill will close in June, partly due to higher costs and difficulty of getting straw and the competition from new semi-chemical woodpulps, reasons for other straw mill closures in recent years. But H & D is a West Virginia P & P subsidiary and the $100,000,-000 expansion program of West Virginia, especially that portion in corrugating medium in its big Southern mill at Charleston, S.C., more than closes up the supply gap for the 12 U.S. Hinde & Dauch box factories.

"NOSE COUNT" FAVORS NEW MILL—A "nose count" at Brewton, Ala., favors welcoming a big paper company—reportedly a Midwestern one—to build a new mill there. Ed Leigh McMillen, president of R. R. Miller Mill Co., said he was contacted by the paper company, which feared the citizens would object to the smell. A straw poll showed 3,836 for the mill, "stink and all," and only 11 against.

Good weather has speeded the new hardwood semi-chemical board mill at Crossett, Ark., and it should be operating by the end of 1955. Improvements in its kraft pulp mill are progressing. The new Ross-Hooper totally enclosed hood is being installed on Crossett's new 216 in. Beloit cylinder board machine. Another Ross-Hooper hood goes on Sonoco Products No. 8 machine at Hartsville, S. C., these being the first in the South.

Black-Clawson is building a big 8-cylinder machine for the new U.S. Gypsum paper mill at Houston, Tex., and also Shartle stock preparation. Sonoco's new Longview, Tex., plant starts up in June.

TWO ALASKA "OFFERINGS" COMING—A U. S. Forest Service offering of the Juneau, Alaska, pulpwood unit of 7½ billion bd. ft. of timber was believed still imminent at press time. When it happens, Georgia-Pacific Plywood Co. is expected to step right in and grab it. Rising stock prices on Alaska-Juneau Gold Mining, which owns a likely site and power resources, had observers guessing the two companies would get together. Henry L. Gray, Seattle electrical engineer, owns an option on all A-J property except the mine. He thinks a 300-ton pulp mill at Thane, Alaska, is the ticket, but Georgia-Pacific has been working for two years on a $56,-000,000 newsprint-pulp project for Alaska.

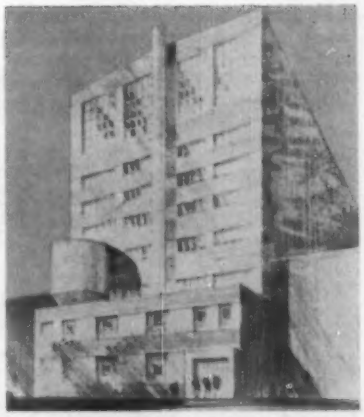
The Forest Service plans to offer the smaller so-called Sitka pulpwood unit for auction in September. Prospective buyer is Alaska Lumber & Pulp Co., organized in Alaska by the Japanese Alaska Pulp Co. of Tokyo. This unit has 4½ billion ft. of timber on Baranof and Chicagof Islands. New executive director of the Tokyo firm is Yukichi Ishida, recent visitor in Alaska, who 30 years ago bought much Washington state lumber for Japan from a Seattle office.

MORE TISSUE MACHINES FOR WEST—Anyone who thinks Pacific Coast tissue expansion will take a breather after the additions of currently announced new machines, may be way off base.

Crown Z's world's biggest Yankee, a 252-in. Beloit, started up in late March at St. Helens. Scott will start its fourth 195-in. machine and second this year at Everett, Wash., before the end of 1955. Kimberly-Clark is building at Fullerton, Calif. But close observers say there are going to be two or three more tissue machines ordered for the Pacific Coast, even after these are in!

Work is proceeding on the Weyerhaeuser-Rhinelander joint glassine mill at Longview, on the new 200-ton Black-Clawson cylinder board machine and mill for Potlatch at Lewiston, Ida., Western Kraft's board mill at Albany, Ore., and Longview Fibre's big expansion program at Longview and Springfield, Ore.

A 260-in. Beloit kraft paper ma-



Increases Nekoosa Capacity

Thanks to this 9-story high, $1,500,000 Combustion Engineering recovery boiler, Nekoosa, Wis., kraft mill will be able to expand by 100 tons a day. Designed to burn 1,050,000 lbs. dry solids 24 hrs. at 500 psi, 700° F.

Predicts Doubling Output!

Roy K. Ferguson, St. Regis president—"It will be necessary to *double* production capacity of paper in North America in next 20-25 years if population growth and increased per capita consumption continue."

He forecast St. Regis sales over $265,-000,000 this year (increase over $200,-000,000 last year due partly to merging with Pollock Paper).

chine has been ordered for 1956 delivery to the new Crown Zellerbach mill at Antioch, Calif., and pulp will be delivered in "noodle" or bulk form by ocean-going ships from its new Duncan Bay, B.C., pulp mill. Crown Z is diversifying by building a green veneer plant, first step toward a multi-million dollar plywood plant, near Portland, Ore. It will supply chips to Camas and St. Helens.

EAST AND MIDWEST NEWS—Ground was broken May 2 for the new Glatfelter $12,500,000 addition including a 176-in. Rice Barton paper machine of over 30,000 tons a year capacity.

Rebuilding of Rhinelander Paper Co.'s No. 3 Yankee machine at Rhinelander, Wis., was to be completed in July at cost of $900,000, materially increasing production of supercalendered sulfite and other specialties of the mill.

Nekoosa, Wis., kraft mill will be able to add 100 tons of pulp per day with completion by late 1955 of its new 350-ton Combustion Engineering pulp-tons capacity recovery unit, designed to burn 1,050,000 lbs. of dry solids per 24 hrs.

"Jim" Julien Honored

Crown Zellerbach honors 147 employes of Camas, Wash. plant with service pin banquet. Vice Pres. P. T. SINCLAIR (right) awards 40-year pin to G. M. JULIEN, Assistant to Resident Manager (left); Office Mgr. HUGH E. BURDON (center) assisting in the presentation.

Continuous Cooking Likely in Alberta

• A continuous cooking process will probably be adopted for the $35,000,000 bleached sulfate pulp mill to be built at Hinton, Alberta, by St. Regis Paper Co. and North Canadian Oils, this having been recommended by Howard Simons and associates, engineers for the project, on the basis of a survey made in Scandinavian mills.

Alberta's first pulp mill will therefore have the distinction of being also one of the pioneers of the the continuous cooking process, and there is no doubt that it will be one of the most modern in equipment throughout.

DOMINION MACHINE ORDERED—A 450-ton Dominion-Minton drying machine has been ordered and it will be installed by Dominion Engineering Co., Lachine, Que. It will have a 168-in. wire. There will be a Fourdrinier at the wet end, with suction couch on the first press, followed by two plain presses and two pre-dryers between each pair of presses, an arrangement that is somewhat unique.

The Minton vacuum dryer will be totally inclosed and will comprise 66 dryers, probably the greatest number ever built into one unit, most of the others averaging 40 to 50 pre-dryers.

Recent visitors to the site of the mill were Frank E. Ruben of Montreal, president of North Canadian Oils, which is in partnership with St. Regis on this enterprise, and J. A. Quinlan, of New York, traffic vice president of St. Regis. They conferred at Hinton with Mr. Simons on engineering details. Vice President Justin McCarthy, St. Regis chief engineer, later met with Mr. Simons in Vancouver.

Approximately 2,000 acres have been acquired for the pulp mill and development of a company town of from 3,500 to 4,000 persons. Tenders are being called for construction of housing facilities and accommodation will be needed for 1,000 men at first.

Athabasca Valley Development Corp. has the contract for the townsite and will install town services, shopping center, etc.

Completion of the mill, which will have a capacity of 150,000 tons of bleached sulfate pulp a year, is planned for the spring of 1957. Chlorine dioxide bleaching is provided.

HOW MILL IS BEING FINANCED—Arrangements for financing the mill were completed recently. This includes $25,000,000 of senior funds which are being furnished by the Bank of Nova Scotia and the Royal Bank of Canada, and $10,000,000 of equity capital of which St. Regis and North Canadian Oils will each provide one half. In addition, Canadian Oils which has a contract to furnish the mill with fuel is to build a 10-in. 140-mile gas pipeline running from a point 40 miles west of Edmonton to Hinton. Requirements of the mill will be about 10,000,000 cu. ft. of gas daily. The pipeline will also serve as a carrier to distribute gas en route.

Cost of the pipeline construction will be close to $5,000,000, which added to North Canadian's $5,000,000 share of the equity capital requirement totals $10,000,000 of financing for that company. This has been arranged for by an underwriting group headed by Ross Knowles & Co. of Toronto.

"Blue Book" Businessmen at New Orleans

• The registration list of over 800 read like a "blue book" of business, banking and industry and governmental officials at the 4-day Inter-American Investment Conference held in New Orleans at the instigation of President Eisenhower to bring together North American investors and industry-builders together with sponsors of Latin American projects.

An amazingly long list of Latin America pulp-paper projects offered at the recent meeting are listed in PULP & PAPER's Spanish-English section, *"What's New in the World of Woodpulp,"* elsewhere in this issue. A permanent clearing house for these projects is established at International House, 607 Gravier St., New Orleans, La.

Another major result was establishment of an affiliate of the World Bank to be known as the International Finance Corp., to assist private investment abroad. Also, a group of investment bankers set up a multi-million dollar trust fund for aiding worthy Latin American projects.

While the conference was on, Peru set an example for other nations by signing an investment guarantee agreement with U.S.A.

Among registrants at New Orleans: M. C. Walsh, special asst. to the president, Champion Paper & Fibre Co.; Reed O. Hunt, vice president, and Einar W. Erickson, asst. vice president, both top manufacturing executives of Crown Zellerbach; Karl Landegger, president of Parsons & Whittemore; H. E. Tower, comptroller, Beloit Iron Works; Charles Stillman, executive vice president of Time, Inc. and president of East Texas Pulp & Paper; several top executives of W. R. Grace & Co., which owns a Peru Paper mill; and many others in companies closely associated with pulp-paper development.

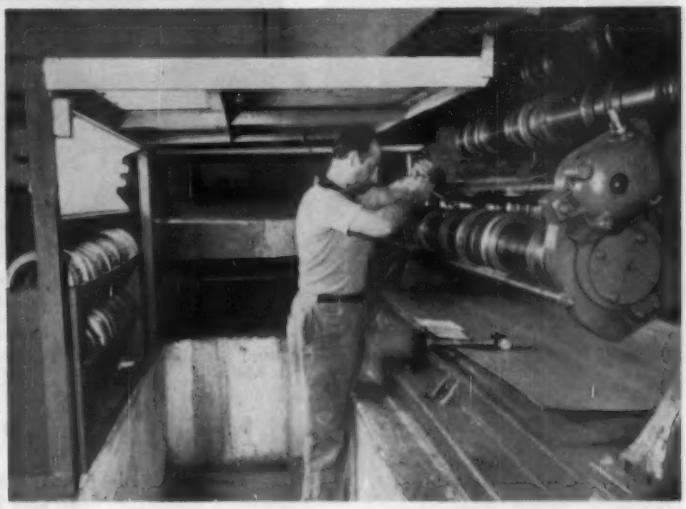
Wanted: Paper

Firm in Costa Rica wants U.S. source of paper (No. 9735), one in Haiti wants wrapping paper (No. 9681). Give no. in writing International House, 607 Gravier St., New Orleans, La. (12).

PULP & PAPER's "HOW TO DO IT" Feature

You Don't Have to Yell!

PAPER MILL WORKERS who sometimes talk themselves hoarse over the roar of machines will quickly recognize the value and ingenuity of this intercom system installed at Robert Gair Co's Piermont, N.Y., plant. Installed at the combining and delivery ends of the new Foiline laminator, it enables workers at both ends of the machine to talk without leaving their stations. First installation in a Gair plant, wider use for these intercoms is scheduled at Piermont.



Getting at Slitter Knives

HARD-TO-GET-AT corrugator slitter knives are easily serviced by a new pit innovation at Robert Gair Co's Teterboro, N.J., plant. Strategically positioned fluorescent lights aid Ralph Van Rensalier to set up corrugated triplex slitter.

Not a Man from Mars! (at right)

MANAGEMENT AT SOUTHERN PAPERBOARD Corp., Port Wentworth, Ga., a Gair subsidiary, designed this acid-proof suit to protect pipefitters and helpers from contact with sulfuric acid while unloading tank cars. A lightweight hood of durable rubberized cloth, with glass lens front, protects head, eyes and neck. A heavy drill cloth apron is double-coated with synthetic black rubber and provides body coverage. DAVID McGOWAN, Jr., pipefitter, models the suit.

Rayonier Directors Meet in Paris

For the first time in the long history of the pulp and paper industry, a North American company has held a directors' meeting in Europe.

Rayonier Inc., which now supplies one-quarter of the world's chemical cellulose, held such a meeting in Paris in mid-May in connection with an extraordinary session of the International Association of Rayon Manufacturers executive committee.

Biggest news from Paris was announcement of a new 300-ton market chemical cellulose mill (see details on page 67). For five successive quarters, Rayonier has broken sales records and its further expansion is not unexpected. Pres. Clyde B. Morgan of Rayonier also announced that regardless of supply shortage there would be no increase in its cellulose prices.

Directors who sailed to France were Mr. Morgan; William A. Parker, chairman; Charles R. Blyth, president, Blyth & Co.; Morton H. Fry, partner, Riter & Co.; D. Samuel Gottesman, president, Gottesman & Co.; Jonathan B. Lovelace, president, Capital Research and Management Co., Los Angeles; Junius A. Richards, partner, H. N. Whitney, Goadby & Co.; Arthur Ross, vice president, Central National Corp.; Carl J. Schmidlapp, Chase Manhattan Bank; John A. Sibley, chairman, Trust Company of Georgia; Ira D. Wallach, executive vice president, Gottesman & Co.; and H. L. Zellerbach, executive vice president, Crown Zellerbach Corp.

James T. Sheehy, Rayonier executive vice president, also a board member, flew to Europe earlier with Michael A. Brown, general sales manager.

STOWE-WOODWARD'S GRIFFIN, Ga. plant is functionally designed for making rubber rolls. Right foreground is Beloit roll balancer, next is incubator pit where rolls are conditioned to plant temperature.

AFTER BEING RECOVERED, this bottom press roll for International Paper Co's. Southern Kraft Div., Natchez, Miss., is being ground to exacting tolerance on this Farrel roll grinder. Photos by PULP & PAPER.

Stowe-Woodard Opens New Georgia Plant

Northern hospitality was served up Dixie-style when Stowe-Woodward formally opened its new rubber roll plant at Griffin, Ga., just 40 miles south of Atlanta. Southern barbecue topped off a guided tour of the $500,000 plant for an estimated 200 guests.

According to president E. W. Peterson, the plant, on a 25-acre location, is of functional design for the single purpose of manufacturing rubber rolls. It incorporates, he adds, the lessons, knowledge and experience of 70 years of rubber manufacturing gained at Newton Upper Falls, Mass.

Paper mill guests came from Rome Kraft Co., St. Regis Paper Co., St. Joe Paper Co., National Container Corp., Gaylord Container Corp., Austell Box Board Corp., Coosa River Newsprint Co., and Carolina Paper Board Corp. Probably honors for furthest distance traveled outside of S-W officials from Newton Upper Falls, went to Clifford A. Nichols, executive vice president, Huntington Rubber Mills, Inc. of Seattle, Wash. Huntington is licensed by S-W for rubber roll covering. Another long distance trekker was C. W. Mathews of Beloit Iron Works, Beloit, Wis.

The Griffin plant is S-W's third such plant and follows an expansion program announced just a little more than a year ago. The Neenah, Wis., plant was dedicated June 15, 1954 (PULP & PAPER, Aug., 1954).

S-W selected all local people for its 25-man staff except for two; Arthur Walker, plant supt., a native of Newton Upper Falls, and Edmund P. Brignac, chemist, who comes from Armstrong Corp. in Macon, Ga. Plant manager is Paul Mitchell, Jr.

On May 5, Griffin-Spalding Chamber of Commerce members feted Stowe-Woodward officials with a real southern hospitality buffet. One S-W official told PULP & PAPER that "there really is something to this southern hospitality" and that he had gotten "religion." When asked what he meant by the latter remark he explained that he had been "converted."

MIKE McMAHON —"The man who can't say goodbye."

Mike McMahon Tributed in Booklet

C. J. (Mike) McMahon, for 28 years sales and service representative for Appleton Woolen Mills in the Middle West territory, is the "hero" of a small booklet put out by his employers entitled "The Man Who Can't Say Goodbye."

It is an exceptional tribute to one of the most popular "peddlers" of the Midwest circuit. An artist's sketch of Mr. McMahon features the booklet and is reproduced above.

A prize paragraph: "First call he ever made for us, his paper mill prospect said: 'So what do you know about felts anyway?' And Mike took a deep breath and said, 'Frankly, not a blamed thing.' 'Well, here's one fella can finally get me what *I* want.' And they've done business together ever since."

The booklet also gives a sendoff to Claire Turner, a protegee of Mr. McMahon, who takes over his territory. It reveals a serious illness finally forced Mr. McMahon, at 70, to retire. He and his wife, Mary, live at 815 West Front St., Appleton, Wis.

Union News—Scott Vote and Merger Talk

Hourly employes of the big Scott mill at Chester, Pa., parent mill of the company (now has over 1,500 hourly employes), have successively voted against representation by the AFL Paper Makers, the United Mine Workers and CIO unions. The most recent vote was 1,143 to 341 against the AFL union. Eight years ago they voted down UMW Dist. 50 and the CIO by similar margins.

Officials of AFL's Paper Makers union and the CIO United Papermakers of America recently discussed the "problems to be solved in achieving unity in the paper industry," says *Business Week*.

Wages on West Coast Up Over 6 Cents

Wages for 18,000 AFL pulp and paper makers in 38 Washington, Oregon and California mills will increase an average of slightly more than 6 cents per hour June 1. Representatives of Pacific Coast Assn. of Pulp & Paper Mfrs. and unions negotiated ten days in April at Portland, Ore.

The night shift differential was increased to 7 cents per hour. Male base rate is $1.845 per hour and women's base, $1.55. The increase adds $2.6 million annually to manufacturers' costs.

S. W. Grimes, secretary of the Coast Assn. of Mfrs., served as their chairman. R. S. Wertheimer, vice-president of Longview Fibre Co., is president of the association. Union participants included Chairman John Sherman, and Ivor D. Isaacson, Pulp, Sulfite & Paper Mill Workers, and Al Brown, Paper Makers.

Sets Wage Pattern For Canadian Mills

The new labor agreement between Canadian International Paper Co. and employes in its five big newsprint and dissolving pulp mills increases its annual payroll by nearly $2 million.

A general 5% increase is given 5,500 hourly employes, with rates from $1.53 to $3.51 per hour.

Unarco Texas Plant

A 50,000 sq. ft. addition to the Union Asbestos & Rubber Co.'s Tyler, Texas, plant has doubled the size of the existing plant, taken over by Unarco last fall.

Unarco began production of Unibestos Amosite pipe insulation at Tyler last January.

Why You See So Many

BIRD JONSSON SCREENS

Hundreds and hundreds of Jonsson Screens are on the job. You see them everywhere.

It's because the Jonsson Screen combines high frequency, circular vibration with its specially shaped screening surface to achieve extraordinary capacity and high screening efficiency on high consistency stocks at minimum power cost.

For Example:

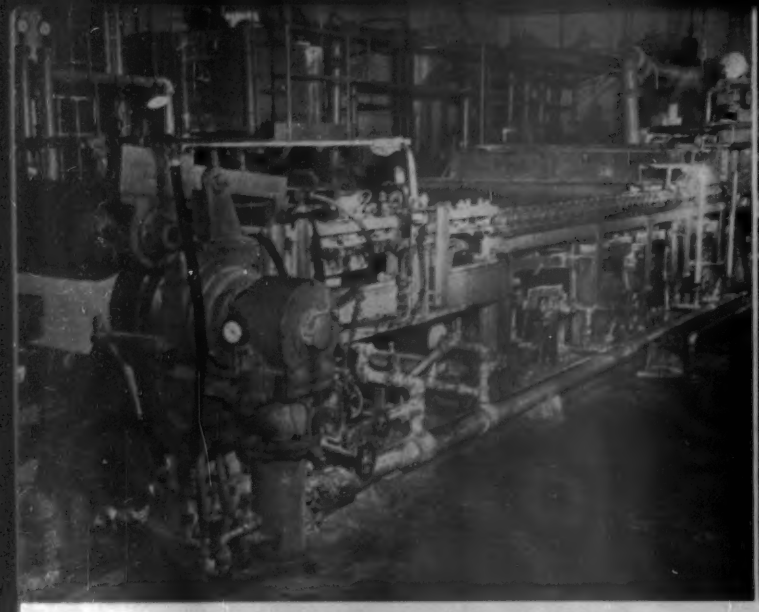
On groundwood and sulphate Bird Jonsson Screens are knotting and bull screening up to 200 tons per screen per day at 2½% consistency, using 3HP or less.

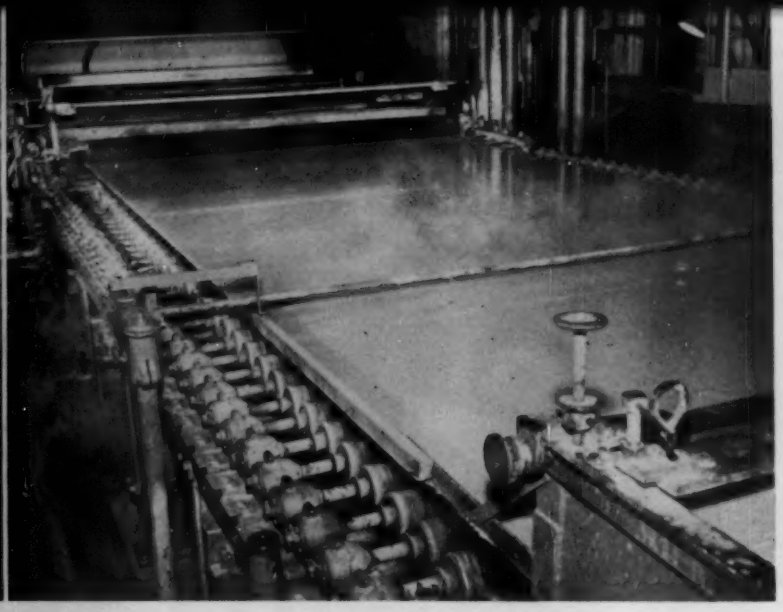
On sulphite and soda pulps Jonsson Screens are knotting 100 tons per day at 1½% consistency.

On brown stock ahead of the washers Jonsson Screens are taking out the knots, chips and shives from 150 tons per screen per day at 1.3 to 2.25% consistency.

On waste paper and deink stocks Jonsson Screens are handling big tonnages at a power cost that is a small fraction of that required by any other dirt removal method — on the order of six hundredths HP per ton.

BIRD MACHINE COMPANY
SOUTH WALPOLE MASSACHUSETTS





Upgraded—for Quality and Uniformity

Two views of Whiting-Plover Paper Co.'s new No. 2 Fourdrinier, at left a side view, and the view at right from above. Bagley & Sewall Division of Black-Clawson Cos. built the Fourdrinier section which is 120 in. wide. Other improvements on this machine, including AccuRay gauge, and a new drive will be supplied.

How Average Size Mill Upped Quality

In heart of Wisconsin is 63-year old Whiting-Plover mill, where modernization was a varied project.

To modernize operations in even an average size rag content mill can become an extensive and varied project. This is the case at Whiting-Plover Paper Co., near Stevens Point, virtually on an island where the Plover River empties into the Wisconsin, which is almost dead center of the state. The Wisconsin River takes a run southeastward from below Mosinee, as far as "The Point," and there it swings sharply back to Wisconsin Rapids, resuming its southerly course to the Mississippi.

Whiting-Plover is one of several Badger State mills which make rag content or other specialties. It also uses high quality purchased woodpulp and cotton linters. Tonnages of these mills are somewhat small but even in their specialties, competition is keen, and their quality must be kept at very high levels.

Whiting-Plover makes about 30 tons a day of tough, air-dried rag content or all rag bonds, ledgers and thin papers. It has one 116-in. Beloit Fourdrinier machine and one 120-in. machine with a new Bagley & Sewall (Black Clawson Division) Fourdrinier section.

George A. Whiting, grandson of the founder, is now chairman of the board of this company. He is a member of the well-known papermaking family engaged in writing paper mill ventures since the last century in Wisconsin. He also is president and treasurer of George A. Whiting Paper Co., which makes about 15 tons a day of coat of arms cover paper, crestline embossed, papeteries, etc., at Menasha, Wis. The Menasha mill was his grandfather's—Col. George A. Whiting—first paper mill, built in the early 1870's. The Stevens Point plant, his second, was built in 1892.

GEORGE A. WHITING—Chairman of Board, recently Pres., of Whiting-Plover Paper Co.

Thomas Leech is president and treasurer of Whiting-Plover. John Hoerres is vice president and secretary. Thomas A. Moore is assistant secretary and treasurer. Dr. L. A. (Al) Moss is mill manager. W. A. Olsen is plant engineer. Don Schmeeckle is assistant mill manager (electrical). W. E. Carlson is technical director.

The building of a new $125,000 dam at Stevens Point, a project carried out by Whiting-Plover engineers and crews in 1951, was a preliminary step which made possible other mill improvement. It gave Whiting-Plover more power. It was the first item in a long range program representing a considerable investment.

STILL MORE TO DO—The program isn't over yet. Changing conditions in supply sources, markets, competitive conditions and improved equipment now available have all contributed to a continuing improvement program at Whiting-Plover. The mill is working on long range plans for further changes, said Dr. Moss.

One of these projects presently underway is a complete modernization of the plant power distribution system throughout the mill. Engineers Olsen and Schmeeckle are working out a layout with consulting engineers which will utilize remote electrical controls.

The work done in the past four years at Whiting-Plover includes changeover from the usual drainer-handling of rag half-stock to the use of a wet machine with automatic lay-boy of Whiting-Plover design. Extensive replacements were made on both Beloit machines, including a complete new Bagley & Sewall Fourdrinier section for No. 2 and dryer replacements. These are aimed at upgrading quality and uniformity. More improvement and additional capacity for No. 1 machine is under way. This calls for an entirely new electric drive.

Ahead of the machines, the mill

*This trademark identifies Whiting-Plover products

now has gone to continuous stock preparation utilizing new Morden Slush-Makers as well as Morden Stock-Makers, preparing stock for both machines.

HOW EFFLUENT IS HANDLED—Another major project recently completed is a new sewage disposal plant for sanitary wastes. Sewers carrying mill effluent have been equipped with automatic measuring and sampling devices to test the white water from machines and other waste before it goes into the Wisconsin River. Official state-set standards have been fully met for pollution abatement.

According to Dr. Moss, exceptionally clear spring water taken out of Plover River is used for rag washing and in condenser in the power plant. The only water taken out of the Wisconsin River is for fire protection. All water used in the papermaking process of Whiting-Plover is artesian well water with an unusually high purity factor, with constant temperature and requiring no water treatment.

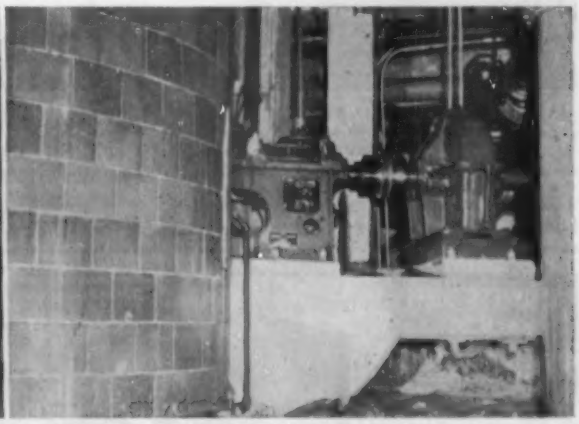
HOW STOCK IS PREPARED—Newest additions in stock preparation at this mill are two Morden Slush-Makers, one of 2,000 lbs. and one of 1,500 lbs. capacity. The bigger one is for breakdown of purchased woodpulp from the West Coast and Canadian pulp mills, of bleached sulfate and sulfite grades and the rag half-stock. The smaller one is also used for broke, including the breaking up of high wet strength broke.

Overall approximate percentage of market woodpulp used in furnish is about 50%. Rags used are about 50%. This compares with 100% of rags used many years ago.

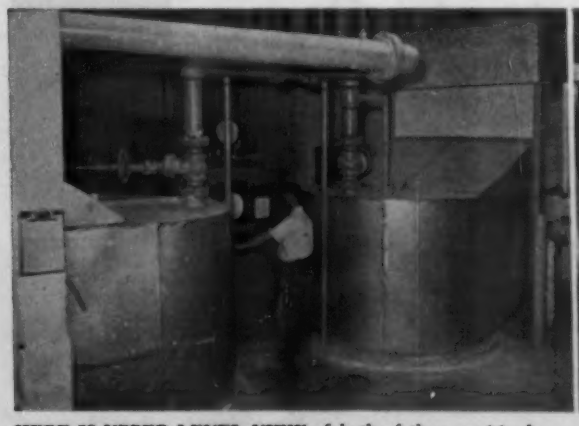
Stebbins Engineering & Mfg. Co. built heat-resistant tile tanks for the two Slush-Makers. The small one for broke uses Semtile resistant to temperatures up to 212° F., and a low pH factor. It is driven by a 150 hp Allis-Chalmers A.P.W.W. motor with Falk reducer and Fast couplings. A side-mounted pulping unit is combined with a single-wall cylindrical tile tank. It has a 34-in. pulper, which readily handles the wet strength paper, as has been demonstrated, according to Dr. Moss. Speed of the pulping action permits greater production than was possible in previous batch processing. All rag washers are tile lined by Stebbins.

The larger Slush-Maker, also with a side-mounted 34-in. pulper, used exclusively for virgin fiber, is driven by a 200 hp Allis-Chalmers A.P.W.W. motor, also with Falk reducer and Fast couplings. This Semtile cylindrical tile tank is resistant to temperatures up to 150° F.

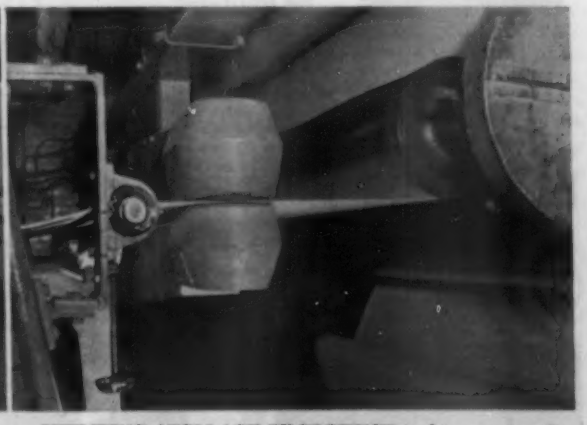
SUCCESSFULLY USED on wet strength waste paper at Whiting-Plover mill, this 1500 lbs. capacity Morden Slush-Maker has Stebbins tile tank resistant to temperature up to 212° F. and low pH factor. It is driven by 150-hp Allis Chalmers motor (left) with Falk reducer and Fast coupling.



FOR BREAKING UP PURCHASED WOODPULP is this 2,000 lb. Morden Slush-Maker recently installed at Whiting-Plover Paper Co. The 34 in. side-mounted pulper, showing Falk reducer at right, connected to Allis-Chalmers 200 hp motor. Single wall Stebbins tile cylindrical tank is at left.



HERE IS UPPER LEVEL VIEW of both of the new Morden Slush-Makers, with pushbutton controls between, at Whiting-Plover Paper Co., which continuously prepare virtually all pulp and other furnish for this mill. The 1500 lb. Slush-Maker is on right; the 2,000 lb. unit on left. Both hoods shown here are of stainless steel fabricated by Overly's, Inc., Neenah, Wis.



UTILIZING ATOM AGE BY-PRODUCT is this new AccuRay gauge by Industrial Nucleonics which makes possible for Whiting-Plover to maintain uniform basis weight on paper web all the way across on the 105 in. trim No. 2 Machine. There is also one on the No. 1 Machine.

Both tanks have stainless steel hoods, fabricated by Overly's, Inc., of Neenah, Wis. Stainless steel pipes carrying stock were also fabricated by Overly's and equipped with their new Vee Grip stock-pipe fittings.

The Slush-Makers are used on all grades and practically all stock is pulped by them. They discharge into a common "Y" where an Allis-Chalmers 16x6 in. P.W.G. 100 hp direct-driven paper stock pump with capacity of 1,000 gpm handles the mixed stock at 6% consistency.

HANDLING BLENDED STOCK at 6% consistency from two Slush-Makers is this Allis-Chalmers 16 x 6 in. direct-driven 100 hp stock pump with capacity of 1,000 gpm, ahead of the Morden Stock-Makers. The big copper fitting shown here was fabricated in Whiting-Plover's own shop.

Next come the Morden Stock-Makers, one serving each paper machine. These are driven by 150 hp A-C motors.

HOW PAPER MACHINES HAVE BEEN IMPROVED—Many changes have been made on the No. 2 120-in. machine. Screening ahead of the machine is done by Bird Dirtecs and Bird 2A cylinder screens. The type of headbox is a Bagley & Sewall 3 pass stainless steel with distributor rolls.

First major replacement was the Fourdrinier section. An entirely new wet end was built by Bagley & Sewall. Lumpbreaker and new rubber covered rolls in wet press section are Stowe-Woodward. Table rolls are by Bagley

Planning More Improvements

These executives at Whiting-Plover Paper Co., Stevens Point, Wis., look over plans for further changes on No. 1 Fourdrinier machine. L to r: W. A. OLSEN, Mill Engineer; TOM LEECH, Pres. and Treas., and DR. L. A. (AL) MOSS, Mill Manager.

& Sewall.

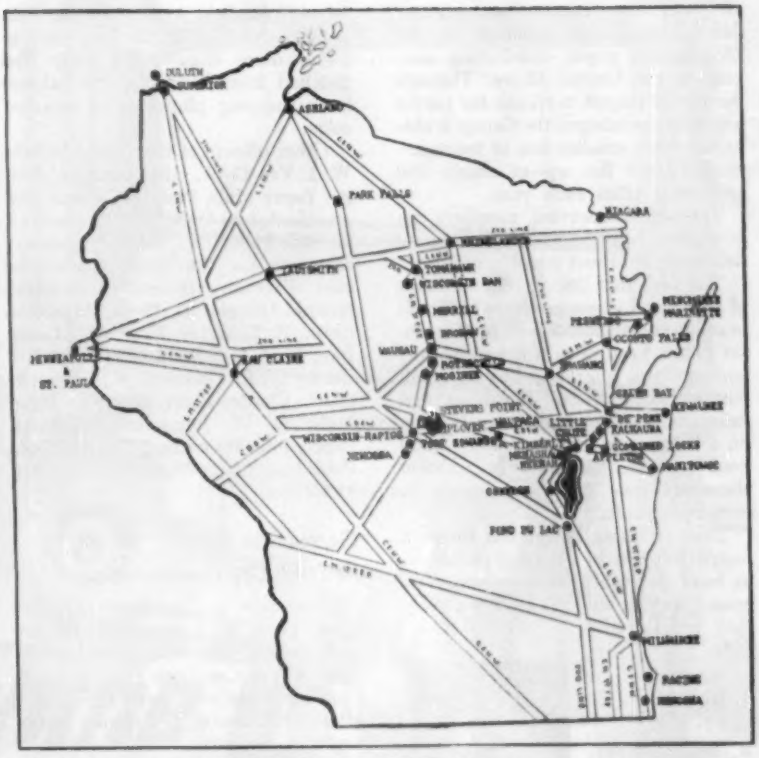
The dryer section rebuild job involved installation of twelve new Bagley & Sewall dryers on No. 1 and fourteen new Bagley & Sewall dryers on No. 2. On the dry end of both machines is an AccuRay gauge by Industrial Nucleonics Co. which uses by-products of atomic energy. These are operated normally as automatic scanning devices, indicating and recording for manual control of basis weight uniformity across the sheet. It traverses the entire width of the machine—over 100 inches.

Instrumentation for No. 2 machine consists of AccuRay gauge, tachometer, Leeds & Northrup automatic pH control, DeZurik consistency and feed control. The drive setup for No. 2 is Duplex steam engine line shaft in basement with cone pulley drives to sections. These are to be replaced in the near future. Screening ahead of No. 1 is done by Bird 2A screen. Headbox for this machine is a 3 pass headbox of Whiting's design.

As stated previously more work is ahead for improving No. 1 machine. It already has new dryers and dryer section improvements by the installation of anti-friction bearings. The dryer rebuild work in the two machines totalled $150,000, about evenly divided.

Instrumentation for the No. 1 machine consists of AccuRay gauge Leeds & Northrup pH control and tachometer. The drive for No. 1 is a Duplex steam engine, which is to be replaced next month.

Almost all of the production at Whiting plant is tub sized and air dried. Steps are now being taken to increase air drying capacity. About 10% of the total production goes into shipping rolls and the remainder is sheeted, sorted either mechanically or by hand sorting methods, and trimmed to final size for the packaging of the Whiting-Plover quality writing and printing papers.



How Wisconsin Mills Collaborate in Shipping

The diamond in the center shows location of Whiting-Plover Paper Co. This map shows how close together are the 35 member mills and converters of the Wisconsin Paper Group. They are conveniently connected to Group warehouse in Neenah-Menasha by excellent network of fine highways and railroads. The Group shipping center in Neenah-Menasha is, in turn, connected to all U. S. markets by three railroads—Soo Line; Chicago & Northwestern; and The Milwaukee Road.

How Whiting-Plover and 34 Other Companies Solve Shipping Problems

• For 21 years Wisconsin paper manufacturers and converters (now 35 companies are members) have maintained the Wisconsin Paper Group, an unusual non-profit organization providing scheduled pool carload delivery service to their customers throughout the United States. Whiting-Plover is a member of this Group.

Through this organization thousands of LCL shipments each month are shipped in pool carloads, at the actual carload freight rate, to cities

all over the country—on regular, dated, dependable schedule to the 75 principal paper distributing markets in the United States. Through the use of stopoff in transit for partial unloading privileges, the Group is able to lay down smaller lots of tonnage—from 10,000 lbs. up—at nearly 200 additional cities each year.

Through this service, members can give their customers fast, frequent deliveries at lowest possible cost.

The fact that 385 grades or kinds of paper and paper products (455 mill brands) are manufactured in Wisconsin plants located in a comparatively compact area interlocked by an excellent network of fine highways and railroads, facilitates this car pooling on a large scale—approximately 3,000 pool carloads per year. In addition there are pool truck movements to certain markets.

Thus, Whiting-Plover has found a happy solution to shipping problems, as have the other 34 members. The accompanying map shows how closely they are linked.

R. W. MAHONY, Pres. of Appleton Coated Paper is new head of Wisconsin Paper Group.

R. W. Mahony, president and general manager of Appleton Coated Paper Co., Appleton, was recently elected new president of the Wisconsin Paper Group. He succeeded G. E. McCorison of Thilmany Pulp & Paper Co. At its last annual meeting, Tad R. Meyer, director of advertising and sales promotion, Nekoosa-Edwards Paper Co., explained the merchandising values of a new book entitled "Profits From Car Pooling for Paper Merchants," published and distributed by the Group to paper merchants throughout the U.S. Mr. Meyer emphasized the dependability of the service.

Dan Hardt, vice president for sales, Neenah Paper Co., emphasized the unusual profit possibilities to paper merchants through increased turnover of inventories which the definite, dated and dependable Group shipping service makes possible.

Irwin Pearson, executive secretary, reported a record 55 million lbs. of paper and paper products were loaded for shipment to markets throughout the country in 1954 at the Group's central warehouse and shipping center—411 Garfield Ave., Menasha, Wis.

Of a total of 3,000 pool cars in 1954, more than 1,300 were dispatched from Menasha, the balance from shipping platforms of member mills.

Other officers of the Group include W. J. Van Dyck, sales manager, Badger Paper Mills, Peshtigo, who is vice president; Leo O. Schubart, president, Neenah Paper Co., who is secretary-treasurer for the 22nd consecutive year. Executive committee members include Douglas G. Hyde, Marathon Corp.; R. T. Meyer, Tape, Inc., Green Bay; Carl A. Schiebler, Nekoosa-Edwards; W. L. Thornton, Jr., Kimberly-Clark; Charles Egan, Shawano Paper Mills; O. W. Johnson, Rhinelander Paper; John Wilterding, George Banta Publishing Co., Menasha, and Mr. McCorison.

Gottesman Sells Arizona Dry Groundwood

Gottesman & Co., Inc., N.Y. has been given exclusive sale of dry groundwood pulp from the Flagstaff, Ariz. mill of Coconino Pulp & Paper Co. Shipments were expected shortly after installation of new drying equipment.

The Coconino mill is favorably located to West Coast and Middle West markets, heretofore dependent on foreign sources for their dry groundwood needs.

Production at Flagstaff is based on use of thinnings from Ponderosa pine forests, to encourage greater growth and better utilization.

Hewitt West, Sr., is president of Coconino. Samples and quotations for Coconino dry groundwood may be had from Gottesman & Co., Inc., 100 Park Ave., N.Y. 17.

Hooker 50 Years Old; Now in Plastics Field

Hooker Electrochemical Co. celebrated its 50th anniversary, May 5.

On that day in 1905, ground was broken on a farm at the company's present headquarters plant site, Niagara Falls, N.Y. for the original plant.

Hooker Electrochemical Co., organized in 1909, is the outgrowth of Development and Funding Co., founded in 1903 by Elon Huntington Hooker, who built the Cornell Dam at Ithaca.

Hooker now produces about 100 different chemicals, all using chlorine, caustic or hydrogen in their manufacture, and supplies over 30 industries. Sales run about $45,000,000 per year. Recent consolidation of Durez Plastics & Chemicals, Inc. of North Tonawanda, N.Y. into Hooker marks a major milestone in the company's growth and plans for diversification.

Up Population! Up Paper Use!

Probably most important event affecting increased consumption of pulp-paper is the Census Bureau announcement that U.S.A. population passed 165,000,000 on June 1, up 25,000,000 since VE Day (May 8, 1945). With a population of 161,900,000 just a year ago, U.S. per capital paper consumption was then 392 lbs.

JOHN T. PENINGER, 20-yr. veteran with Southern Kraft Div., is new Assistant to Auditor H. F. LaMarche, International Paper Co. (Picture by PULP & PAPER)

Peninger Advances

John T. Peninger, new assistant to auditor of International Paper, was Southern Kraft division manager of auditing for past six months and before that was mill agent, representing the N.Y. headquarters at Springhill, La., and Natchez, Miss., mills. He studied at Louisiana College and Chillicothe College.

More Swedish Newsprint Will Take Pulp Off Market

Swedish Cellulose Co. (net profit $6,900,000 last year) is building a newsprint mill at Ortviken, Sundsvall, adjacent to its Skönvik sulfite mill. Capacity, 70,000 tons a year by 1958. Later to be doubled. This means sale of Skönvik bleached sulfite pulp will gradually be discontinued.

Its kraft pulp output of 120,000 tons from Ostrand mill will all be bleached within 3 years. Now only 50,000 tons can be bleached.

Harold Cavin in Japan On Alaska Mill Plans

Harold D. Cavin, chief engineer for construction work of Ketchikan and Puget Pulp mills, and consultant to Japanese Alaska Pulp Co., spent April 15 to 26 in Japan for the purpose of elaborating on plans for the projected pulp mill at Sitka, Alaska.

He consulted with these Japanese company officials: Yoshio Mitsuzawa, adviser, Oji Seishi K. K.; Sakae Fukuyama, executive director, Honshu Seishi K. K.; Tomomata Katayama, vice president, Tohoku Pulp K. K.; and Sachio Arisawa, chief technician, Kokoku Jinken Pulp K. K.

Another Highlight

in Cameron's

sweeping new

design program

Camachine® 400

The modern Camachine slitter and rewinder for finishing rooms and converting plants . . .

unsurpassed in a winder of its size for quality, versatility, productivity

PRODUCTIVITY: The versatile production range of the 400 provides speeds up to 1000 fpm* with a maximum rewind capacity of 30″ dia. The 400 permits quick-changeover-choice of the best slitting method for the material to be handled—shear-cut, razor-cut, and either Camachine pneumatic or spring-lever score-cut. For optimum speed and efficiency in small roll production the 400 can be equipped with an automatic stop, electric-operated riding roll lift, roll ejector, shaft injector, and tucker. Speed, tension, and riding roll pressure may be controlled to suit the material being processed. All operating controls are panel mounted for easy accessibility and increased productivity.

DEPENDABILITY: The 400 is built with sturdy one-piece side frames. All rolls and rotating components run in anti-friction bearings. Rolls are positively locked axially to eliminate end play and to assure optimum web control. The rewind shaft bearing carriages are also designed to eliminate end play and to prevent strip interweave. Important design features which contribute to the exceptionally smooth operation of the 400, resulting in long machine life, include the precise, dynamic balancing of all rotating elements and the silent-running positive tooth belts on the main drive.

QUALITY: The new 400 can be readily adapted to meet the exact requirements of the material which is being processed. The best slitting method for the job can be selected, whether score-cut, shear-cut, or razor-cut. Slitting elements are conveniently located for easy setting-up and adjustment, to assure accuracy of strip width. The counterbalanced riding roll is belt-driven at both ends for optimum pressure distribution across the full width of the rewinding rolls. The combination of clean, accurate slitting and superior web control from start to finish of the run means consistent top-quality roll production on all types of material.

*Speed is dependent upon the character of the material to be processed and the machine width.

DON'T WIND UP WITH LESS THAN A Camachine

CAMERON MACHINE COMPANY • 61 Poplar Street • Brooklyn 1, N. Y.

Low-Down on Top-Side Folks in Michigan

● PULP & PAPER staged this picture of two Michiganders who often are said, even by best friends, to look alike.

Both are past chairmen of the Michigan Supts. Division, and Ray L. Barton went on to become a national president and is now a trustee of the association. He was born Oct. 7, 1900 at Groveton, N.H.

His first mill job was at Susquehannah Paper Co., Northumberland, N.H., at 16. He worked up to chief chemist at Groveton Paper Co., taking a summer papermaking course at U. of Maine while there. He has been at Michigan Paper Co., Plainwell, Mich., since 1930, as chief chemist, and since 1936 as general supt. He is exalted ruler of the Otsego, Mich. Elks Lodge.

Alfred B. Perlick was born Dec. 6, 1906 at Bayard, Neb. He was just 5 when his widowed mother brought her 7 children back to her Kalamazoo home. Besides being a star baseball player, he worked at Hawthorne Paper Co. and Clarage before joining KVP in 1926. He developed its low density bleaching system in 1930, became supervisor of bleaching and stock preparation in 1932, a position he has held since. He set up two bleach plants there and helped develop a power plant water softening system.

How "The Gang" Gonged Up on "Cal"

If you already have read about the Michigan Supts. surprise testimonial dinner which recently honored Olin W. Callighan, paper industry sales manager for Minerals & Chemicals Corp. and active for 25 years in Kalamazoo and national industry activities, here's the low-down on how it happened:

Glen Sutton of Sutherland Paper and Ray Barton of Michigan Paper were the instigators and got "Cal" down to the Harris Hotel on the pretext that the committee for the annual Kalamazoo Ladies Night party was in a jam with arrangements, and needed his help to smooth out a problem with the hotel.

When "Cal" charged in like a fireman dashing to a 5-alarm fire, he found 35 papermakers and other friends present. Mr. Sutton and Mr. Barton were toastmasters and it ended up with "Cal" receiving a scroll extolling his services to the industry, its associations, and Western Michigan College.

His "boss," Al Blake, executive vice president of Minerals & Chemicals, came all the way from Metuchen, N.J., for the party.

"Look Alikes" Are Well Known In Michigan Industry

Is this ALFRED B. PERLICK, KVP Co.'s Supervisor of Bleaching and Stock Preparation, shaking hands with RAY L. BARTON, Michigan Paper Co.'s General Supt., or vice versa? They are occasionally mistaken for one another, so PULP & PAPER staged this picture at recent Kalamazoo Ladies' Night party. In case you don't know, Mr. Perlick is on the left.

Statistical Courses Planned at Madison

TAPPI's 4th Conference on Statistical Methods will be held at the Forest Products Laboratory, Madison, Wis., July 11 to 22.

An elementary course will deal with basic statistical techniques; analysis of variance and simple and multiple regression as used to handle problems of variation that arise in a paper mill.

An advanced seminar course will deal with advanced applications, particularly multiple regression and correlation and design of experiments. Those enrolling are encouraged to bring their problems.

Residence will be in Kronshage Hall beside Lake Mendota. Fee including board and lodging will be $200 for the elementary course, $260.00 for the advanced. An extra charge of $40 a week covers board and lodging for wives.

Applications should be made to Fred R. Sheldon, Becco Chemical Div., Food Machinery & Chemical Corp., Station B, Buffalo 7, N. Y.

New Kalamazoo Equipment

John B. Kohler organization, Crystal Lake, Ill., is installing the first of its new simplified fixed position unwind stands with automatic tension and full speed roll change for St. Regis Paper Co. in Kalamazoo, Mich.

A new and less complicated center wind with full speed roll change is also being introduced to the industry, based on a patent license agreement with the Beloit Iron Works.

Michigan Students Hear Advice on Entering Industry

R. T. Trelfa, Watervliet Paper technical director, chairmanned a recognition dinner for Western Michigan paper technology students at Kalamazoo, and James A. Dean of Michigan Paper presented a $100 scholarship to the top junior student, Lawrence Portolotti.

Elmer Stilbert, assistant mgr., Dow Chemical's Coatings Technical service, used cartoons and humor to tell graduates how to adjust themselves to industry "junior" status. He suggested industry do more to facilitate the "breaking-in." Robert T. Elias, associate professor, presented seniors Lester Beeman, Don Martin, Ronald Morgan, Kenneth Rasmussen and Leonard Timmer, who reported on their theses.

RAYMOND J. SHILLUM (left), outstanding Middle West metallurgist who directed work on much stainless and alloy fabrication for pulp and paper mills over recent years, heads new company to serve industry in Detroit.

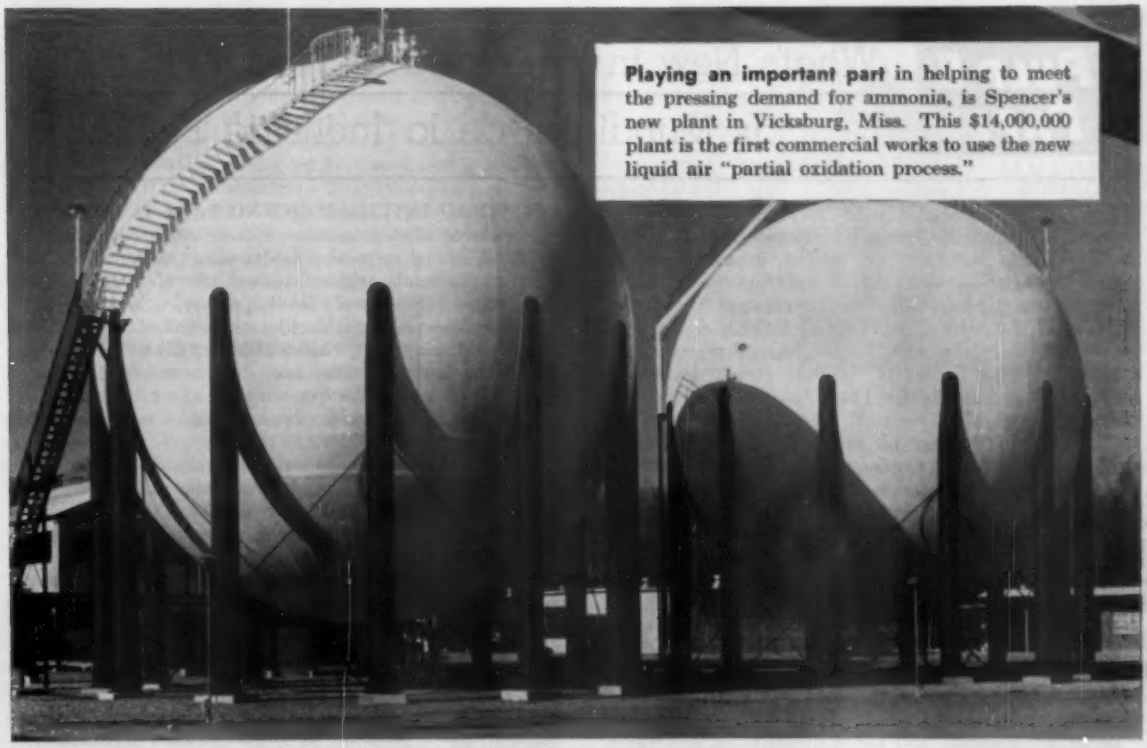
RAYMOND HOLLANDER (right), who has long been one of Mr. Shillum's associates in work for pulp and paper mills and other industries, is associated with him in the new March Corp.

New Firm In Corrosion Resistance, Metals Fields

Formation of the March Corp., 18101 James Couzens Highway, Detroit 35, Mich., to engage in applied technical sales of specialized products and services in the high temperature, corrosion resisting and metallurgical fields, is announced (phone Diamond 1-2175).

Its incorporators and officers are Raymond J. Shillum, Raymond Hollander and Eugene V. Ivanson, metallurgical engineers with a combined experience of over 75 years. The new firm will represent a number of well established concerns in the alloy and steel fabrication, and special casting fields.

Mr. Shillum has been vice president and sales manager of Brown-Hutchinson Iron Works; Mr. Hollander, a director and sales engineer with the same company, and Mr. Ivanso, vice president of the Detroit Testing Laboratory, Inc., where he also was metallurgical and corrosion engineer.



Playing an important part in helping to meet the pressing demand for ammonia, is Spencer's new plant in Vicksburg, Miss. This $14,000,000 plant is the first commercial works to use the new liquid air "partial oxidation process."

Now You Can Switch to Ammonium Bisulphite . . . with Confidence

New Ammonia Plants Assure Adequate Supply for Pulp Mills

Latest reports show that mill owners who have switched to ammonium bisulphite pulping have lower costs and higher profits. Also, the greater ease with which ammonium liquors can be evaporated and burned has helped solve another increasingly urgent problem—that of disposal.

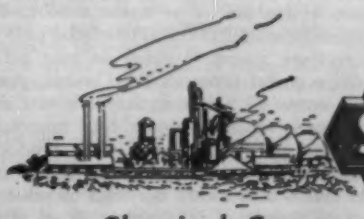
Perhaps you have hesitated to make the change — even though test runs indicated that you have everything to gain. You may have feared getting caught in an ammonia shortage.

If so, you need worry no longer. Huge new facilities, like Spencer's $14,000,000 plant at Vicksburg, Mississippi, mean that adequate and reliable supplies of ammonia are now available to all mill owners. As a result, many owners are *reconsidering* the advantages of ammonium bisulphite pulping.

Maybe you wonder how these newest developments affect *your* future. Why not send us your questions? Just write: Technical Service Section, Spencer Chemical Company, Kansas City, 5, Mo.

Here's how you can save with ammonium bisulphite:

1. Shorter cooking time.
2. Lower cooking temperatures.
3. Higher yields of pulp.
4. Hardwoods can be pulped.
5. Operations cleaner and more uniform.



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Spencer Chemical Company • America's growing name in chemicals

PULP & PAPER

What's New in the World of Woodpulp

Noticias Mundiales de la Industria Pulpera

NEW INTER-AMERICAN INVESTMENT SERVICE—Competent, reputable industrial promoters and business men of Latin America are invited to use a newly-established Inter-American Investment Opportunity Service now permanently established at International House, New Orleans 12, La., U.S.A. A PULP & PAPER editor, on a recent visit to International House, learned that this permanent "clearing house" to facilitate private investment by North Americans in new Latin American enterprises is now fully established.

This is a follow-up of recent well-attended Inter-American Investment Conference held in New Orleans at suggestion of President Eisenhower to bring Latin American sponsors together with North American bankers, investors, etc. Reputable North American firms and individuals also are invited to use the service. Up-to-date information will be available concerning the "investment climate" in each country, PULP & PAPER learned, but International House, which is a successful privately-financed cooperative agency for furthering international commerce, will remain strictly neutral.

Some projects already proposed: Uruguay's No. 7—Forest and sugar cane products. Paraguay's No. 21 and 23—Wood waste board and forest products in both cases. Costa Rica's No. 12—Paper mill. Cuba's No. 23—Bagasse pulp mill for export, in free port. Guatemala's No. 14—Bagasse wrapping and bag paper for local use. Argentina's No. 9—firm with 6,000 customers wants more modern containers and paper packing materials. Brazil's No. 12—To convert wood waste from existing plywood plant. Cuba's No. 2—Bagasse pulp and paper for Cuba.

Cuba's No. 13—Bagasse alpha cellulose plant. Mexico's No. 5—Wood cellulose, wrapping and containerboard from bagasse. Has $480,000 U.S. capital. Costa Rica's No. 10—to reorganize existing paper mill and bag plant. Bolivia's No. 3—Chemical pulp and paper mill, to tie in with present converter. Cuba's No. 16—To extend paper mill now reportedly selling all it makes. Ecuador's No. 12—chip board from mangle wood.

Refer to nation and number in writing for information. Address: International House, 607 Gravier St., New Orleans, La., U.S.A. (P.O. Box 604. Phone: Canal 3591).

RITCHIE TOURS EUROPE FOR PULP PRODUCERS—Since the United States has become for the first time in its history a net exporter of woodpulp to Europe, James L. Ritchie, executive director of the U.S. Pulp Producers Association, Inc., was making a survey and tour of several European countries last month. Several leading representative members of his association have likewise been overseas in the past several months.

27% OF CANADA'S PULP EXPORTED—While about 73% of the woodpulp manufactured in Canada is used in the producing mills of that country for further processing, 27% comes within the category of market pulp and as such is exported to some 35 countries at the rate of approximately 2,000,000 tons annually.

Before World War II, Canadian woodpulp accounted for less than 15% of all pulp moving in international trade, and was distributed to only about 13 countries. Today, Canada accounts for about one-third of the entire international movement in this commodity.

Chemical pulps, representing about 40% of total pulp

SERVICIO INTERAMERICANO PARA INVERSIONES—Se ofrece a los promotores industriales y comerciales de Latinoamérica un nuevo medio para realizar inversiones en la nombrada región, denominado el Inter-American Investment Opportunity Service, o Servicio Interamericano para Inversiones, establecido en la International House (Casa Internacional), Nueva Orleans, EUA. Durante una visita a la citada sede, uno de nuestros redactores se informó de los medios que ofrece la agencia para facilitar inversiones de capitales norteamericanos en empresas de latinoamérica.

El establecimiento del servicio resulta de la junta sobre inversiones interamericanas celebrada recientemente en Nueva Orleans por iniciativa del Sr. Presidente Eisenhower, con la mira de establecer relaciones entre capitalistas norteamericanos e intereses latinoamericanos. Supo nuestro redactor que el servicio ofrece informes de última hora sobre las condiciones en cada país, sin embargo la Casa Internacional, siendo empresa para fomentar el comercio, matendrá completa neutralidad en todo sentido.

Ya se han propuesto algunos proyectos de interés, como los siguientes:

Uruguay Num. 7—Productos forestales y de caña de azúcar. Paraguay Num. 21 y 23—Cartón y productos forestales. Costa Rica Num. 12—Fábrica de papel. Cuba Num. 23—Fábrica de pulpa de bagazo para exportación. Guatemala Num. 14—Papel de bagazo para sacos y envuelvo. Argentina Num. 9—Una fábrica con clientela de 6000 necesita más cartones y materiales de envuelvo. Brasil Num. 12.—Utilización de sobrantes de una fábrica de madera laminada. Cuba Num. 2—Pulpa y papel de bagazo para uso en el país.

Cuba Num. 13—Fábrica de celulosa de bagazo. México Num. 5—Papel y cartón de bagazo, ya tiene 480.000 dls. capital. Costa Rica Num. 10—Rearreglo de una fábrica de papel y sacos. Bolivia Num. 3—Fábrica de pulpa y papel en conjunto con fábrica de productos de papel. Cuba Num. 16—Extensión de fábrica de papel. Ecuador Num. 12—Producción de cartón grueso.

Al lector interesado se ruega indicar el número y país del proyecto al escribir a la International House, PO Box 604, New Orleans 12, Louisiana, EUA. Teléfono Canal 3591.

VIAJERO INTERESADO—Ya que EUA ha resultado nación exportadora de pulpa a Europa, el Sr. James L. Ritchie, director de la US Pulp Producers Association hizo ultimamente un viaje de estudio por varias naciones europeas. Otros representantes de las firmas asociadas también han hecho semejantes viajes.

EXPORTACION DEL CANADA—En el Canadá, cerca de 73% de la pulpa se consume en el mismo país y el 27% se denomina para el mercado y se envía a 35 naciones a razón de aproximadamente 2.000.000 toneladas cada año.

Antes de la reciente guerra mundial no más del 15% de la exportación mundial procedía del Canadá, porción que se distribuía entre 13 naciones; hoy día el Canadá exporta más o menos la tercera parte del total mundial.

La pulpa química, que forma el 40% de la producción nacional canadiense, es la de principal comercio internacional, siendo más o menos 50% del total mundial. Las clases mecánicas se consumen principalmente en el país, resultando que solamente el 4% se vende al extranjero.

production in Canada, are the main export grades, representing about 50% of the total. Mechanical grades, which comprise about 57% of total production, move mainly to the domestic market and only about 4% is exported.

Bleached chemical grades led in ratio of output exported and about 88% of all bleached sulfate produced in Canada is exported and about 60% of the bleached sulfite pulp. Last year, volume of exports of unbleached sulfite was about the same as that of dissolving pulp and bleached sulfite paper grades, although only about 22% of unbleached sulfite was exported. It is significant that before 1953 exports of unbleached sulfite pulp exceeded in volume both the other grades.

There has been a consistent year-to-year increase in exports of bleached sulfate pulp from Canada since the end of the war, and bleached sulfite paper grades continue in strong export demand, with exports reaching a record point last year. Production of dissolving pulp in Canada was higher in 1954 than ever before and exports exceeded 1953's all-time high figure. Production of unbleached sulfite and groundwood pulps has been steady, although exports have been less.

The United States is the dominant market for Canada's pulp exports, accounting for nearly 75%, although sales overseas have been growing. Except for 1950 and 1951, sales to the U. S. were greater in 1954 than ever before, but shipments to Latin America, Europe and all other overseas markets together were the greatest in history.

SWEDEN'S BIGGEST PULP YEAR, OVER TWO-THIRDS EXPORTED—Sweden's output of pulp is estimated to have totalled 2,825,000 tons in 1954, which is about 325,000 tons more than in 1953 and 40,000 tons more than in the previous peak year, 1938, according to a survey in the financial journal *Finanstidningen*.

Out of total production over 70% was exported, i.e. about 1,870,000 tons of chemical pulp and nearly 360,000 tons of mechanical pulp. The stocks at the mills were estimated at approximately 180,000 tons at the end of last year, as against 200,000 tons in December 1953. By way of comparison it may be mentioned that the depletion of stocks amounted to 200,000 tons.

FINLAND-RUSSIA IN NEW TRADE AGREEMENTS—An agreement was signed in Moscow last year, it is now revealed, governing the exchange of merchandise between Finland and the Soviet Union in 1956-1960. Under the new agreement 1956 Finnish exports have been estimated at some 34,100 million marks, advancing to 37,800 million by 1960. Exports will comprise in the main the products of the ship building and engineering industries—accounting for about 58% of Finland's total exports to the USSR—and raw materials and forest industry products. The commodity lists covered by the agreement include paper machines, pulpwood, viscose pulp, various paper qualities, and board boxes.

EDITORS NOTE—

Worldwide commerce in woodpulp is setting new patterns as well as new records. Woodpulp has become a billion dollar commodity in world trade.

As a service to hundreds of subscribers to PULP & PAPER in other countries, we are now publishing our world pulp news in both Spanish and English on these pages.

Hoy día en el comercio mundial de pulpa se están realizando grandes cambios, al mismo tiempo que dicho comercio aumenta notablemente. El valor de la pulpa como artículo de comercio mundial ya asciende a mas de 1.000.000.000 dls.

Con el anhelo de mejor servir a nuestros muchos lectores, mensualmente publicamos nuestras noticias mundiales en espanol e inglés.

MANUEL DEL CASTILLO – Now he can provide Mexico with more diversified pulp and paper equipment.

SR. MANUEL DEL CASTILLO. Ofrece a la industria Mexicana más diversos equipos para fabricar pulpa y papel.

Pulpas de alto grado, blanqueadas, son las que más se exportan en relación con la producción nacional. De la pulpa de sulfato blanqueada, cerca del 80% fué para exportación, y le la de sulfito blanqueada, cerca del 60%. El año pasado, la cantidad de exportación de pulpa de sulfito sin blanquear fué igual a la de pulpa para disolver y para papel de sulfito, pero se exportó solamente el 22% de la producción de sulfito sin blanquear. Es notable que antes de 1953 la exportación de pulpa de sulfito sin blanquear fué mayor que la de los dos otros grados.

La exportación de pulpa de sulfato blanqueada ha aumentado regularmente de año en año; también sigue fuerte la demanda de pulpa para papel de sulfito blanqueado. Se produjo en 1954 mayor cantidad que nunca de pulpa para disolver, y la exportación de dicho grado fue mayor que la de 1933, hasta entonces el año de mayor exportación. Sigue la producción de sulfito sin blanquear y de otras pulpas, mas la cantidad exportada disminuye.

Los EE. UU. son el principal mercado para las pulpas canadienses, pues el país vecino consume casi el 75%, pero siempre aumenta la exportación a los países ultramarinos. Solamente en 1950 y 1951 se vendió mayor cantidad a los EE. UU. que en 1954, pero las ventas en Latinoamérica, Europa y otros mercados mundiales fueron en suma mayores que jamás. Han aumentado las compras de parte de la República Argentina, Brasil, Colombia, el Perú, Países Bajos, Bélgica, España, Pakistan, Formosa, Corea e India. La Gran Bretaña sigue a los EE. UU. como mayor compradora, y el Japón lleva el tercer puesto.

EN SUECIA SE PRODUJO MAS QUE NUNCA—Se calcula que la producción de pulpa en Suecia llegó en 1954 a 2.825.000 toneladas, excediendo el total de 1953 por 325.000 toneladas y el de 1938, año anterior de mayor producción, por 40.000. Así lo declara la revista financiera *Finanstidningen*.

La cantidad de exportaciones llegó hasta el 70%, o sean cerca de 1.870.000 toneladas de pulpa química y cerca de 360.000 de mecánica. Existencias al fin del año se calculan en 180.000 toneladas, comparadas con 200.000 en diciembre de 1953. Las existencias se redujeron por 200.000 toneladas.

ACUERDO URSS-FINLANDIA—Ultimamente se anunció que hace un año se firmó en Moscú un concuerdo para el intercambio de mercancías entre Finlandia y la Unión Soviética para los años 1956-60. Se dice que según dicho convenio Finlandia exportará a la URSS mercancías a valor de 34.100.000.000 marcos, cantidad que aumentará a 37.800.000.000 en 1960. La mayor parte de lo exportado de Finlandia serán trabajos de astillería e ingeniería, mas productos forestales. Entre los artículos de comercio hay máquinas de fabricar papel, leña de pulpa, pulpa viscosa, papeles de varias clases y cajas de carton.

Besides Materials, There Are Other Wastes, Too

Participants in Wisconsin Supts. meeting (l to r): PAUL WEST, Thilmany Pulp Supt., who chairmanned arrangements; CHARLES SEABORNE JR., Power Engineer, Thilmany, who reported on its "Cut Waste Campaign"; his father, CHARLES SEABORNE SR., Exec. Vice Pres., Thilmany, who conceived of the successful campaign, and GUS KLAUS, Marathon Converting Supt., and Northwestern Supts. Div. Chairman.

Sometimes Men are "Wasted"

A new report on Thilmany's highly successful "Reduce Waste and Cut Costs" campaign

• "Controlling cost of a product depends not only on salvaging waste materials, but also in slicing into other types of waste—waste of men, machines and time."

This was the theme of a talk by Charles Seaborne, Jr., power engineer for Thilmany Pulp & Paper Co., at a meeting of 200 Northwestern Division Superintendents and guests at Kaukauna, Wis.

He cited some tangible ways which were originated and instituted as successful savings practices during a "cut waste" campaign at Thilmany. Many listeners made notes of these schemes.

But, said Mr. Seaborne, there is really no way to measure the success of the whole program, as it involves the coordination of men and machines, good labor relations, satisfaction in a job, and a worker's sense of importance of the company's welfare in his own life.

PULP & PAPER featured a special two-page article on the "Reduce Waste and Cut Costs" campaign at Thilmany in its Jan. 1955 issue, pages 92-93, showing how it was conducted.

Charles Seaborne, Sr., executive vice president of Thilmany, who originated the cost control program, told the Kaukauna meeting how it was conceived and organized. His remarks preceded his son's report.

Here are some specific ideas revealed by Mr. Seaborne Jr.:

SOME PRACTICAL SAVINGS—Saved $43,000 in a year by finding ways to use some waste paper as fuel. (Takes about $1,000,000 of good paper to make $50,000 worth of fuel from broke).

He estimated when the "right heat recovery process" is discovered, the equivalent of 26 tons of coal in low energy heat can be recovered daily.

A new protective covering of cardboard around header rolls cuts down paper loss.

Roll cores are being re-used, a savings of 18 cents for each re-use.

In about one year's filtering of sewer waste, some 700 tons of fiber has been salvaged. (Though low grade, it is worth about $50 a ton, a savings of $35,000 a year.)

SOME INTANGIBLE SAVINGS—Other less tangible ways of making savings, he said, were:

Keeping a balance between requirements of a job and workers' capabilities. Providing adequate machinery. Otherwise, costs soar, labor is unhappy. Timing of orders by sales department can keep warehousing down. Deliveries on time mean fewer cancellations and less redoing of work that should be done first time around.

"A company must have alert supervisors and foremen," he said. "They must be quick to see new methods, processes and effective use of labor and facilities. They must be able to promote enthusiasm and interest."

Gus Klaus, converting supt., Marathon Corp., Green Bay, chairmanned the meeting. Paul West, Thilmany pulp supt., chairmanned arrangements. Appleton Wire Works and Thilmany and Consolidated's Interlake mills were toured.

It's Vice Pres. McCarthy Now—Other St. Regis Advances

Justin H. McCarthy, chief engineer of St. Regis pulp and paper divisions, based in Jacksonville, Fla., has been named a vice president. He is now "in the thick" of three announced major expansion plans—the pulp mill in Alberta, paper mill machine additions at Tacoma, Wash., and Jacksonville, Fla.

He is a graduate of Dartmouth College, with 17 years experience with Hardy S. Ferguson, consulting engineer, and was chief engineer for Soundview Pulp expansion, Everett, Wash., and for St. Regis at Tacoma, before becoming the company's chief engineer.

John K. Ferguson's appointment as assistant to Exec. Vice Pres. Edward R. Gay was previously announced in PULP & PAPER. William W. Gordon is new general sales mgr. for Panelyte products. Gardiner Lane is new director of Product Development Dept.

Kraft Conference Near Two New Mills

TAPPI's Alkaline Pulping Conference is now set for Chattanooga, Tenn., close to two new mills—Bowaters Southern at Calhoun, Tenn., and Rome Kraft Corp., Rome, Ga. The conference is at the Hotel Patten, Oct. 19-21.

FRANK BARFKNECHT—new Paper Mill Supt., The Chesapeake Corp. of Va., West Point, Va., as announced by Gen. Supt. Erik Zimmerman.

Barfknecht Takes Over Post as Supt.

Frank Barfknecht is the new paper mill supt. at The Chesapeake Corp. of Va., according to announcement by Erik Zimmerman, general supt.

Mr. Barfknecht has been at the West Point, Va., mill for 16 years, was formerly with Lake States and Oregon mills.

He succeeds the late Harry F. Rieck, who died at 57 on Mar. 23 after a long illness, and in turn was succeeded as shift foreman by T. G. "Booster" Hodges, a native of Roanoke Rapids, N.C., with West Point since 1931. The other shift foremen at West Point are E. L. Wrenn, Percy Turner and Clare Kruse.

"Does Four Jobs at Georgia Plant"

CUTTING DEEP, Macon Kraft's TD-14A dresses the pile in the company's yard near Macon, Georgia.

Purchased for coal compaction, INTERNATIONAL TD-14A with an INTERNATIONAL DROTT Skid-Shovel now does wood handling, general grading and loading

BUILDING UP a big 2 cubic yards in the Skid-Shovel, the TD-14A starts another load on the way to the hopper.

MASTER MECHANIC S. D. "Jack" Frost of the Macon Kraft Company says: *"We are very well pleased with our TD-14A and Skid-Shovel. Due to the ease of changing from one attachment to the other, it is only necessary that we have this one versatile machine for coal handling, wood handling and general grading and loading."*

Macon Kraft Company found a fast way to solve four problems around the plant at Macon, Georgia.

They put an INTERNATIONAL TD-14A with an INTERNATIONAL DROTT Skid-Shovel to work compacting and sealing the company's pile. The speedy TD-14A completes compaction chores, fills the hopper, then goes to work on custom dozing jobs.

And when coal or dirt-moving work is completed, a pulpwood rack replaces the bucket on the Skid-Shovel for wood-handling.

INTERNATIONAL DROTT Skid-Shovels have the versatility that makes them first choice at those plants where one machine has to do a lot of jobs. To see how you can cut cost and speed up production, call your INTERNATIONAL Industrial Power Distributor today. He'll arrange a demonstration as fast as tomorrow, anywhere you wish.

INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS

INTERNATIONAL HARVESTER

INTERNATIONAL
INDUSTRIAL POWER

MAKES EVERY LOAD A PAYLOAD

WHAT'S THE *BEST* *WAY* TO HANDLE *WOOD?*

YOU NAME YOUR NEED...THERE'S A LORAIN TO FIT THE JOB...

That "king-size" pulpwood handler at top right is the new big Lorain 820-KS Rake. In one fast swoop, it reaches out 62 ft. and rakes 5 ft. pulpwood from barges to conveyor system at the conveyor capacity rate of 100 cords per hour. Time saved is tremendous — savings in barge damage are even greater.

The big "820" Rake is a typical example of the way Lorain has met the needs of the pulpwood industry — designing and building machines that fit the very special handling problems of the industry. Other examples also are shown. Mountings are on either crawlers or rubber-tires — slings, grabs, rakes can be had at your option to handle pulpwood — jackstrawed, piled or bundled . . . wet, dry or frozen . . . large or small — in the woods or at the mill.

To you, here's how it adds up. Bring your pulpwood handling problem to your Thew-Lorain Distributor. He can show you dozens of examples, help you get the most for your money — because Lorains are *specialists* in solving pulpwood handling problems. You'll find the right answer for low-cost and profit!

THE THEW SHOVEL CO., Lorain, Ohio

THEW LORAIN

BIG RAKE

If it's big production you want, this Lorain 820-KS Rake can speed up unloading from barges to mill conveyor. The Rake — in two sizes — is a new idea in pulpwood unloading . . . a specialized tool designed by Thew-Lorain for the pulpwood industry.

SLING

15-ton Lorain Self-Propelled crane, with gooseneck boom specially designed to handle bundled pulpwood. Speeds up to 7 m.p.h.

GRAB

On this blockpile, it's a Lorain-50 with pulpwood grab. Mounted on crawlers, it keeps busy on loading operations from pile to conveyor.

LITTLE RAKE

Another Lorain Rake, in the popular TL-25 "Series", shown unloading cars. Note how Rake arm reaches over car — cleans it off completely — high production — minimum car damage. Write for literature on Lorain Rakes and other types for pulpwood handling!

Labor Bills Threaten Small Wood Producers

Paper work and checking on thousands of individuals in woods, minimum wage would jump South, East costs

• The freedom of more than 30,000 small pulpwood producers to act as independent contractors exempt from the Wage and Hour provisions of the Fair Labor Standards Act is at stake in the current session of Congress.

The minimum wage is not the major issue to wood producers, says W. S. Bromley, executive secretary, American Pulpwood Assn. More than 20 bills to date propose to abolish the present 12-man and seasonal exemptions from the FLSA. Two bills proposed the common-law definition of "employe."

The 12-man exemption now relieves employers of 12 men or less in pulpwood production from the record keeping, overtime and minimum wage requirements. The seasonal exemption permits employers to engage workers up to 56 hours before overtime is applied for a period of 14 weeks for the highly seasonal work of ice road hauling, sap-peeling and river driving.

"We need the definition of employe," says Mr. Bromley, "proposed by Senator Capehart in S. 1437 and Congressman Gwin in HR. 4955. This will firmly establish pulpwood workers as 'employes' of producers and producers as independent contractors, which they are." Then, the Wage and Hour Division could not claim such woods workers work for companies or dealers to whom they actually sell their pulpwood as independent merchants.

HOW SOUTHERN MILLS SERVE MANY—A Southern paper industry vice president told a PULP & PAPER editor in the South: "The greatest thing we have done in the South is give thousands of independent farmers or woodlot owners their sons home from school, etc., a new added, off-season source of personal income. Who are gainers in oil, cotton, other Southern industries? Comparatively few lucky ones."

To eliminate the 12-man and seasonal exemptions under which nearly two-thirds of all pulpwood is produced, adds Mr. Bromley, would place a burden of increased supervision, increased and impractical record-keeping and uneconomic operation on the really small pulpwood businessmen.

LITTLE BUSINESS ENTERPRISES AT STAKE—Elimination of the 12-man exemption is unrealistic when it is noted that the average producer cuts and delivers less than 1,000 cords (less than 330 truckloads) per year. The balance of the time he may work on farms, roads and other seasonal work to round out his income.

The APA says pulpwood production should be exempt from provisions of the FLSA just as the production of fruit, turpentine, fruit and turpentine trees, grain and other crops from the soil is exempt.

APA leaders coordinated their views before submitting their position before the Labor Sub-Committee of the Senate Committee on Labor and Public Welfare April 29.

WHAT WITNESSES SAID—R. E. Canfield, APA Counsel, projected color slides of pulpwood operations to show the conditions peculiar to the industry. "We believe," he said, "that there should be no increased minimum wage. If there is to be one regardless of inflationary effect, it should not exceed the 90 cents recommended by the President."

Seasonal exemption's importance to Northern operations were explained by George D. Carlisle of Prentiss & Carlisle Co., Bangor, Me.

R. D. Wilcox, Harris-Wilcox Timber Co., Laurel, Miss., opposed abolition of the 12-man exemption, saying it would eliminate many small pulpwood producers, who haul wood to nearest rail sidings or concentration yards and sell it as they would cattle.

Confusion on the definition of "employe," Carr Gibson, Lumberton, N.C., said, left him in doubt as to who were his employes and discourages small business ventures.

Their views were supported by wood dealers William S. Mundy, Jr., Lynchburg, Va., Peyton D. Breckenridge, Columbus, Ga., and Russell Watson, Manistique, Mich.

A P&P Editor Touring Texas Got Home Safe!

George Day, of Southern Kraft Div., International Paper Co., Timberlands Dept., Division, found this sign in the woods of Orange County, Tex.:

"NOTIS! Tresspassers will B percecuted to the full extent of 2 mangrel dogs which neve was over sochible to strangers & 1 dubble Brl. shot gun which aint loded with sofa pillers. Dam if I aint gitten tired of this Hell raisin on my place!"

APA Issues Chemical Debarking Training Guide

Practical help in training workers in safe and better chemical debarking is provided in Training Guide No. 5, "Chemical Debarking of Trees," recently issued by the American Pulpwood Assn. The guide is well illustrated with photographs showing treating equipment, methods of application and safety instructions. A handy pocket-size chemical debarkers' note book is included with the guide which gives brief, easily understood information chemical debarking.

APA members may obtain extra copies of *Training Guide No. 5* and *Chemical Debarkers' Notebook* for 35¢ and 15¢ respectively; non-members for 50¢ and 25¢ by writing APA at 220 E. 42 St., N.Y. 17.

First Showing—In the South

BERNARD H. BLYTHE (right) and ROY C. WEEKS demonstrate the self locking feature of Electric Steel Foundry Co.'s new cast manganese pulpwood conveyor chain. It is made without pins, which are subject to wear. Mr. Blythe represents ESCO in Columbia, S.C., territory; Mr. Weeks, at Mission, Kans. The chain was presented at the Southern Pine Ass'n meeting and exhibit; is listed as ES-132.

How Chips Are Made at Big Texas Mill

● Contributing its share to forest conservation through conversion of sawmill waste, Southern Pine Lumber Co., Diboll, Texas, which ranked second in 1954 Southern lumber production, brought into service in January this year a modern barking and chipping installation. Initial shipments of a carload per day were expected to attain three carlots. Chips presently go to Champion's Pasadena, Tex., paper mill.

Where Logs Are Barked and Chipped

American Hoist & Derrick crane swings logs from rail cars to deck of barker installation at big Texas mill, using Mack Welding tongs.

Barked logs about to drop to uphaul chain to enter sawmill after debarking. Sturdy, skillfully planned Jeffrey conveying system into and out of barking building is shown.

Pine log entering Nicholson mechanical barker, manufactured in Seattle.

Sumner Iron Works chipper which is driven by a G-E 200 hp motor through Dayton V-belt.

Logs are unloaded to the elevated barker structure by means of a shipyard gantry type crane having a reach of 110 ft., using Mack Welding Co. tongs. This crane unloads from rail car or truck to deck or adjoining pond, and can lift logs from any part of the installation back into the pond, or vice versa. The structure is set on pilings, and extends partially over the old mill pond.

Heavy chains on the deck move logs to the spool conveyor leading to the Nicholson mechanical barker. Kickers that load the spools, or can unload to a midway deck separating inbound from outbound log conveyors provide a short, practical by-pass. Kickers, spool conveyors, chains and other conveyor installation came from Jeffrey Mfg. Co.

Pine logs go through the barker, are kicked to chains leading back past a Simonds solid tooth circular cut-off saw, mounted on a Filer & Stowell shot gun driven carriage. Kickers are also provided to unload special logs to a rack from which they are picked up by the crane.

Full control of the entire operation is centered in a console facing the barker. A mirror enables the operator to see the outfeed end. At the end of the barker structure, the log slides down a steel plate to the uphaul chain into the sawmill. Threshing is prevented by a 10x6 ft. steel plate on each side.

From sawmill slasher, clean trimmings and edgings are conveyed to a new type wide spout 66-in. Sumner Iron Works chipper, driven by a 200 hp General Electric triclad induction motor through Dayton D240 V-belt set. This chipper is especially designed by Sumner for sawmill use.

Chips are passed over an Orville-Simpson Model 82 Rotex vibrating screen and blown into a waiting box car. Chipper knives are kept sharp with a Hanchett Mfg. Co. size 108 MEC grinder.

During 1954, Southern Pine Lumber produced 66,806,042 ft. of lumber. Production averages 75% softwood and 25% hardwood. Arthur Temple, Jr., president of the company, is active in the Southern Pine Association, Texas Lumber Manufacturers' Assn., and other organizations. The company operation is a completely integrated forest products enterprise, having a wide range of manufacturing units, including a preserving plant.

Bad Fires

Forest fires in Louisiana during 1954 were the worst in a 20 year period, according to James E. Mixon, state forester.

ELIMINATES SKY LINES AND DONKEY ENGINES

As part of its extensive expansion program, the Simpson Paper Company at Everett, Washington, recently purchased industry's most efficient crane, an American 700 Series Crawler Crane, to speed up log loading-unloading operations. The powerful American Crane handles both incoming and outgoing logs at the storage area. It has eliminated old style sky line systems operated by donkey engines.

Among the features of the American 700 Series Crane which helps cut log handling time for Simpson Paper are anti-friction bearings used at every vital point. For instance, in the brake linkage anti-friction bearings reduce leg effort 60%, more than doubling the operator's efficiency. Power-controlled boom lowering, permanently-aligned shafts, gears and assemblies contribute to American's overall smoothness and accuracy and make possible faster operation. And you'll find that American has the toughest travel machinery in the field. For complete, free information on how American Crawler and Truck Cranes can cut handling time and increase efficiency in your operations, see your American distributor, or write American Hoist & Derrick Co., St. Paul 1, Minnesota.

Scott and I.P. Involved in Big Timber Deal

Alabama Vredenburgh properties settled, with sawmill and town disposed of, way cleared for pulpwood use

● Effective April 23, E. L. Bruce Co., nationally known Memphis (Tenn.) hardwood flooring manufacturers, became owners of the Vredenburgh Saw Mill Co. pine lumber mill, acquiring with it a log supply of 100 million ft., from paper mill company ownership sources. The mill village went with the sawmill. Purchase price was not revealed.

Documentary stamps indicate probable liquidation of the sawmill along with consumption of the stumpage. Accordance with standard forest management practices, followed by both paper mill companies involved, would call for harvesting of marked trees for cutting. Thus, Bruce company does not acquire stumpage but a guaranteed log supply.

Because of inheritance tax problems among other factors the fine pine timber stands and sawmill of the Vredenburgh family had borne the "for sale" sign for some years. By a stock transaction recorded June 30, 1954, new owners, and their proportionate shares in assets, were listed as follows:

Hollingsworth & Whitney Co., (Scott Paper Co. subsidiary), 15/45ths; International Paper Co., 15/45ths; W. Sam Carpenter III, 4/45ths; George T. Weymouth, 4/45ths; C. Porter Schutt, 4/45ths and Harris M. Gordon, 3/45ths, all of Wilmington, Del.

Besides sawmill and town, they acquired 78,000 acres of timberland in Wilcox and Monroe counties.

Since acquisition, the Alabama property has been under the direction of L. G. Glazier, a Hollingsworth & Whitney vice president, as managing agent.

Founded in 1912 by Peter Vredenburgh, Jr., the Alabama operation is engaged 100% in pine production. Selective cutting from the first has resulted in one of the finest timber stands in southern Alabama. This area is rated as one best for tree growing in the South.

Much has been said and mis-said about the early operators in virgin Southern stand that harvested mature stands for conversion into homes and buildings in an expanding nation. The Vredenburg property presents the other side of the picture. Here "Old Peter" spoke "broken English" but was very smart. Because of his selective cutting practices, his timber stand never diminished substantially in capacity to produce sawlogs. However a half-century later, what with diminished purchasing value of the dollar as compared to 1912 and other economic factors, his immediate family faced an impossible situation in ownership because of profit and inheritance taxes.

Negotiations with a paper company two years ago, it is understood, bogged down over the problem presented by disinclination to assume responsibility of ownership of a village and, more important, inability to obtain clear-cut no-recourse decision on the part of treasury in re taxes. At that time the amount of $5,000,000 net to Vredenburgh owners was mentioned.

Subsequent developments involving enlistment of another paper company and other interests in the deal resulted in over-all financing ability to underwrite the complete project so that the family, according to local sources, could "go home" with $7 million.

Pulpwood Prices in South

The price of pine pulpwood has remained the same in the South for the last several years, and is $13.75 per standard cord of rough pine fob railroad cars.

There are a few deviations from this because of local conditions, severance tax, or other reasons. The hardwood price is variable and generally governed by the difference in the value of pine and hardwood stumpage.

Southern Industry Seeks More National Forest Wood

Discussions relating to the amounts of pulpwood that may be anticipated from national forests in the South were carried on in an executive meeting of Southwest Technical Committee, American Pulpwood Assn., in Jackson, Miss., on March 30.

Industry representatives met with forest supervisors.

During fiscal year 1954, cut of pulpwood from Southern national forests (8,915,735 commercial forest acres) amounted to 249, 273 cords, or one cord per 35 acres. The Southern pulp and paper industry seeks a larger volume. Guy Curtis, Gaylord Container Corp., presided.

T. M. PFAFF, President, Spartan Equipment Co., Charlotte, N.C., active throughout the South as Link Belt Speeder Corp. rep until formation of the distributor company he now heads, which headquarters at 1922 Bancroft St. and is a Link Belt Speeder Corp. distributor.

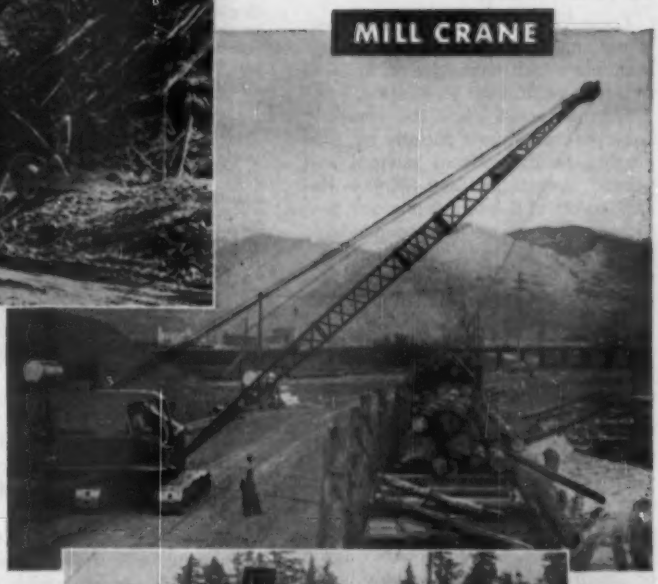
Back to School—Yale For Pulpwood Execs

Many well known pulp and paper and forest industry executives went back to school for 2 weeks recently. They convened at Yale University for a series of seminar refresher courses in forest management and industrial administration under George A. Garratt, Dean of the Yale School of Forestry, Ernest T. F. Wohlenberg, Professor of Industrial Forestry, and other Yale faculty.

Among "students" were B. E. Allen, supt. of land acquisition and conservation, Union Bag & Paper Corp.; W. M. Bailey, assistant division supt., International Paper Co., Springhill, La.; Leonard J. Forrest, manager, Land Dept., Rayonier Inc.; H. William Freed, assistant manager, Timber Div., Longview Fibre Co.; D. E. Hess, vice president, Glatfelter Pulp Wood Co.; Seaman K. Hudson, manager, Pulpwood Dept., Container Corp. of America; William A. Johnson, chief scaler, Brown Co., Berlin, N.H.; Harry W. Korb, forest technical assistant, International Paper, Georgetown, S.C.; Arthur W. Nelson, Jr., chief forester, Flintkote Co., Meridian. Miss.; Arnold C. Shaw, chief forester, Champion Paper & Fibre, Canton, N.C.; and Karl A. Swenning, general woods manager, Hollingsworth & Whitney Div., Scott Papar Co.

$2,400 Fellowship Open at Syracuse

A research fellowship sponsored by American Pulpwood Association at State University College of Forestry, Syracuse, N. Y., at $2,400 on a twelve-month basis is currently open, according to Dr. Edwin C. Jahn, associate dean. The graduate fellow would work on a directory of research in growing and harvesting pulpwood, which, according to W. S. Bromley, executive secretary of APA, will serve the pulpwood industry and public agencies as a reference guide. To apply for the fellowship write Graduate Committee, State University of New York College of Forestry, Syracuse 10, New York.



Showing the Way From Camp to Mill

You can give your logging operations a real boost by assigning key jobs to Bucyrus-Erie excavators. Because they're easy to convert to various front ends, one basic machine equips you for a wide variety of excavating and lifting jobs — a shovel or dragline for building haul roads and other dirt-moving work; a crane for loading logs at the campsite, at transfer points, and at the mill; or a clamshell for maintenance and cleanup jobs.

Changeovers from one front end to another are made easily right in the woods. The shovel crowd drum, for example, is removable with the boom as a unit, making front end conversion little more than merely switching booms. With changeovers made as quick and easy as this, you're always ready to tackle the immediate job with the front end attachment best suited to the work.

All the facts on these versatile, convertible excavators are available from your nearby Bucyrus-Erie distributor. Call him or see him now for detailed information on these three favorite models of logging companies — the ¾-yd. 22-B, the 1½-yd. 38-B, and the 2-yd. 51-B. Also ask about the 22-B Transit Crane — carrier-mounted to give you rubber-tired mobility. 113E55

BUCYRUS ERIE

South Milwaukee Wisconsin

1880 75 1955 YEARS OF SERVICE to Men Who Shape the Earth

Using Waste Wood, So Sells Timber!

Longview Fibre Co., Longview, Wash., has sold 52,000 acres of timberlands which it purchased in 1946 to a lumber firm for $6,935,000.

During recent years the company has operated almost entirely by purchasing residuals from sawmill and veneer operations, and expects increased use of this left-over wood, providing an economic and dependable supply. As a result, the company's policy is to limit its timberland acquisitions to tracts containing little or no mature timber.

B. C. Parks Hold Too Much Timber?

British Columbia forest operators believe excessive timber is being withheld from logging in park areas.

E. G. Oldham, chief forester for the parks and recreation division, B.C. Forest Service, said he couldn't agree or disagree until a survey now being slowly carried out had been completed. But he admitted that some forest now set aside as park should be logged. Total park area in B.C. now is 9 million acres.

Rayonier Dedications

Rayonier, Inc.'s Southeastern and Northwestern timber divisions approached fuller utilization of company-owned lands in dedication ceremonies last month.

The "Clyde B. Morgan Nursery," named for Rayonier's president, a new 20-acre forest tree nursery, was dedicated May 22 one mile west of Yulee, Fla., 12 miles from the Fernandina Division. It has a capacity of from 5-7 million Southern Pine seedlings per year.

On May 8, a new 4-acre Promised Land Recreation Area, some 25 miles north of the Rayonier mill at Hoquiam, Wash., was opened.

Russell F. Erickson, vice president and M. B. Houston, manager of North west Timber Division, were present.

PULPWOOD PERSONALS

JAMES F. SPIERS, has become Area 3 forester for Southern Pulpwood Conservation Ass'n, with headquarters at 316 Gentilly Road, Statesboro, S.C.

W. R. HINES, assistant regional forester, Atlanta, Ga., received a Nash Conservation Award for his work in promoting reforestation and developing programs to make management service available to small woodland owners.

SEEKING BETTER-BRED TREES

Left to right: ALBERT ERNEST, Vice Pres. and Southern Woodlands Mgr., St. Regis Paper Co., an original instigator of the Florida project; DR. THOMAS O. PERRY, who is directing University of Florida program, and DR. WANG CHI-WU, refugee from Red China, who is assisting him.

Florida Will Grow Superior Trees

● Virtually all tree seeds planted in Florida 15 to 20 years from now will come from genetically superior trees if a newly expanded research program at the University of Florida school of forestry, Gainesville, Fla., achieves its goal.

Already Florida's researchers have shown that 2-yr.-old grafts of loblolly and slash pines can successfully bear cones.

Major pulp and paper industries supporting this forest genetics research work are Brunswick, Buckeye, Container Corp., Robert Gair, Hudson, International, Rayonier, St. Joe, St. Regis and Union Bag.

Albert Ernest, vice president and Southern logging manager for St. Regis, and Donald Stevenson, woods chief for Buckeye Cellulose, are original supporters of this genetics project. They persuaded the Florida Forestry Association to get behind it. This resulted in a recent $20,000 grant from the industries.

Dr. Thomas O. Perry, assistant professor at Florida, is in charge. Dr. Wang Chi-Wu, former associate professor of forestry at Kwangsi University, China, is assisting. Dr. C. M. Kaufman is director of the Florida forestry school.

Cypress and various hardwoods also will be bred selectively in seed orchards. Special strains for better pulpwood will be a goal.

It is noted that, through controlled breeding, Monterey pines have produced 3 to 5-fold increases in vigor and form quality in Australia. A few years ago, PULP & PAPER first reported how a great pulp and paper industry in Australia and New Zealand has been launched as result of transplanting of a California Monterey pine there many years ago, where it grew several times faster than in California.

JOHN HARVIE, previously erroneously reported as new manager for North Western P.&P. (St. Regis) mill to be built in Alberta, is its woodlands manager.

Wire Skidding Book

A comprehensive treatise on wire skidding, particularly as applied to Eastern forests, has been prepared by A. Koroloff, director of the woodlands research division, and R. D. Collier, formerly associate mechanical engineer, Pulp and Paper Research Institute of Canada, and published by that organization in Montreal.

In Eastern Canada, as Mr. Koroleff points out, wire skidding is in some cases the only alternative to writing off as commercially inaccessible the timber barred by, or growing on, steep, rough slopes. "The contribution of wire skidding to the economical procurement of wood in Canada will depend not only on the extent to which this method is adopted, but on research to improve the technique," he declares.

While the 135-page illustrated report concludes a project under way some time, consideration is being given to an extension of the study in cooperation with some of the companies, with emphasis on multiple-span wire skidding.

Mr. Koroleff is a pioneer of wire skidding in the woods of Eastern Canada. This operation has been demonstrated to be economical by Canadian International Paper Co. in Quebec and International Paper Co. in New York.

Wire skidding is based on suspension of a load from a single tensioned wire and the movement of the load under its own weight.

As to costs, it is estimated that depending on labor cost (within $8 to $10 per day) the cost of wire skidding may be expected to be between $3 and $4 a cord under poor conditions; between $2.15 and $2.50 under average conditions (with daily output of 12 cords and a two-man crew); under good conditions it may be about $2 a cord, or less.

Copies of the report may be obtained from McGill University Book Store, 3480 University St., Montreal.

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That smart green package is like no other in town. Wherever it travels, everyone recognizes the distinctive color as Lord & Taylor's. Lord & Taylor, like many smart retailers, realizes the value of a unique store color as a "traveling advertisement." *Your* customers can get this store recognition, if you help each one to choose *his* own package color. Once he selects his color, he'll want to use it on wrapping paper, bags, boxes, gummed tape — every kind of packaging material you sell.

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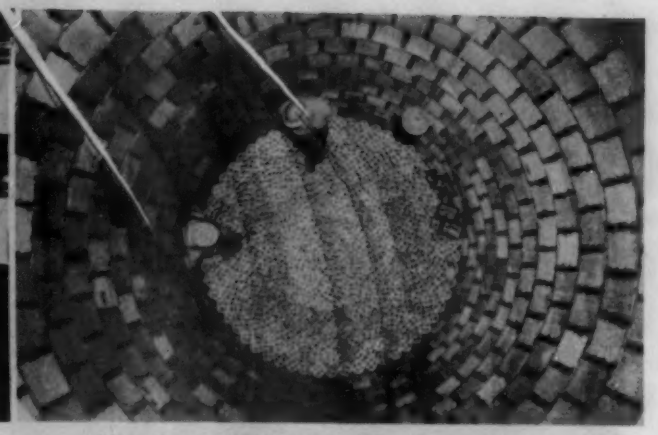
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

"We Just Let Them Run Together"

The changeover was made to ammonia base at Salem, Ore., without pulling liquor down. This panel bears SO_2 analyzer (Leeds-Northrup), liquid level controllers (Foxboro), integrating controlling and ammonia-water proportioning meter (Foxboro) and monometer indicating gas fans pressure at gas fans (Merriam). ED GOERTZEN, Acid Maker.



How Tower is Converted for Ammonia

Looking down into former lime rock tower, converted to acid tower for Oregon P & P, Stebbins installed tile lining at bottom and repointed lining tile with AR-20 plastic cement.

How Oregon Mill Converted to Ammonia

• Another Pacific Northwest sulfite mill—the seventh in that area—has converted from calcium to ammonia base. Oregon Pulp & Paper Co. made the change in its Salem, Ore. mill, according to Prod. Mgr. Cecil Taylor, "to facilitate using a wider variety of wood species."

Conversion took place without production loss. In fact, the change-over was made "without pulling the liquor down; we just let them run together," is the way one staff member expressed it.

One of the plant's two former lime rock towers was converted to an acid tower for ammonia base cooking and cut into the system. Until conversion of the second tower, the original unit provided cooking acid for the entire production.

Mr. Taylor credits the smooth, on-schedule conversion to key personnel including Gen. Supt. J. B. Beck, Sulfite Supt. George Moorhead, Plant Engr. O. P. Wegner and Elec. Engr. Gerald Richards, and Stebbins Engineering which coordinated tower rebuilding with other installations. Stebbins furnished and installed tile lining at the bottom of both towers and repointed the lining tile with AR-20 plastic cement. Each tower is filled with 30,000 pieces of 6 x 6-in. La-Clede-Christy partition tile.

Other new prime installations: 4 interlocked mild-steel aqua ammonia storage tanks, each 10 ft. diameter by 36 ft. long; mixer and heat exchanger, controls, transmission lines and pumping system.

Watching a New Mill Go Up

ALLAN HYER (left), Vice Pres. and a "senior statesman" of the now greatly expanded and diversified Black-Clawson Cos., crossed the continent to see the continuing rapid expansion of the Pacific Coast industry with his colleague, GORDON PETRIE (right), of Portland, Ore., Western Sales Mgr. for The Black-Clawson Cos.

Two Washingtonians Head Electric Firms

Two of the major electrical manufacturing firms are now headed by Washington State natives and graduates of schools in that state. As Washington is the No. 1 woodpulp state, this is of interest to many P & P readers.

Newest is Robert S. Stevenson, now president of Allis-Chalmers Mfg. Co., who was born in Seattle, and graduated from Spokane, Wash., and Portland, Ore., schools and Washington State College. He has been with A-C 22 years, recently as executive v.p.

General Electric is headed by Ralph J. Cordiner, graduate of Whitman College, Walla Walla, Wash., and fellow Washingtonian.

Thousands Tour Valdosta Mill

National Container Corp.'s kraft pulp, board and paper mill, at Clyattville, near Valdosta, Ga., rated 500 tons per day, attracted thousands of residents of Valdosta and surrounding communities to its "Open House" the weekend of Apr. 16.

It was their first opportunity to see the plant which has substantially exceeded its rated capacity recently.

Steenberg on Tour

Dr. Borje Steenberg, research director, Paper Technology Dept., Swedish Forest Products Research Laboratory, made a trip to Germany in May. He has many former students in the industry in North America.

In Pulp-Paper Industry News

ANDREW J. SCHRODER (left) now a Vice Pres. of Scott Paper Co. and Director of Industrial Relations. He is a graduate of Cornell and U. of Penn. law and joined Scott in 1937 after two years with FBI.

STANLEY W. JONES (right) former Manager of Production Engineering for Chas. Bruning Co., Chicago, has joined John B. Kohler, Paper Industry Consultant and designer of finishing and converting equipment, at Crystal Lake, Ill. Mr. Jones designed equipment for U. S. Gypsum and United Wallpapers, Inc., and for aircraft companies.

Johns-Manville CHEMPAC® PACKING withstands active acids and alkalis

CHEMPAC is a new Johns-Manville Packing which combines the sealing action and heat-resistance of asbestos with the all-around chemical resistance of Teflon*. Because of its versatility Chempac greatly reduces the number of packing styles needed for mill equipment. Moreover, stocking and inventory present no problem because the inert ingredients of Chempac do not deteriorate.

Chempac is outstanding in service against most acids and alkalis at temperatures to 500°F. It is especially recommended for use in pumps handling calcium bisulfite cooking liquor, sulfurous acid and relief gases . . . on relief valves on sulfite digesters . . . on valve stems exposed to chlorine, and for other equipment in service against corrosive liquids.

Chempac Packing is available in coil, spiral and ring form for rod, plunger and valve stem applications. Johns-Manville also manufactures Chempac Gaskets, made of plies of asbestos cloth treated with Teflon.

Your Johns-Manville Packing Distributor can help you select the right Chempac Packing or Gasket for your application. For complete information, write him or Johns-Manville for PK80A, Box 60, New York 16, N. Y. In Canada, 199 Bay Street, Toronto 1, Ontario.

*Trade mark for DuPont Tetrafluoroethylene resin

Pioneer in packings for over 80 years

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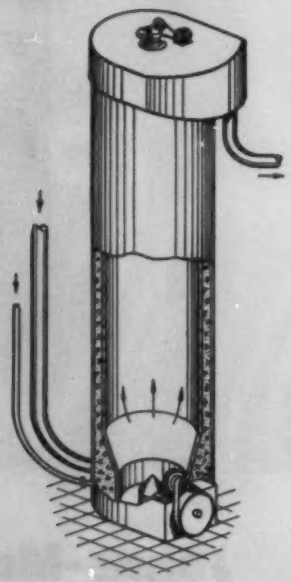
Bleaching Equipment
Always In Front!

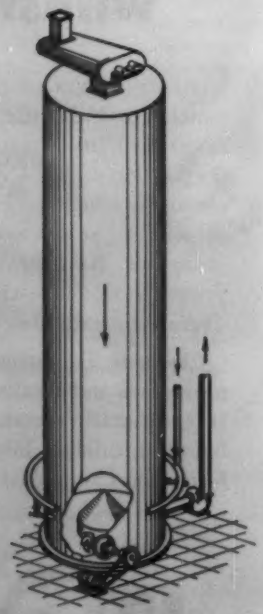
First with Continuous Low Density Upflow Chlorination Tower . . . . .

Invented by Kamyr in 1934 ▶



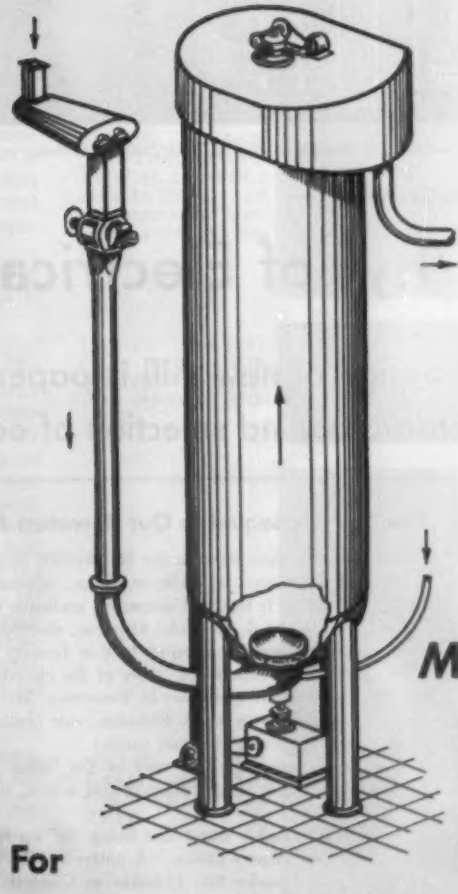
First with Today's Standard Continuous High Density Downflow Tower . . . . .

Invented by Kamyr in 1939 ▶



First AGAIN with:

New Continuous High Density Upflow Tower



Invented by Kamyr in 1953

More than 30 Units Now Operating Or On Order

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Exclusively Sold and Manufactured in the U.S.A. by

THE SANDY HILL IRON & BRASS WORKS
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Kamyr Equipment sold in Canada by Paper Machinery Ltd., Montreal

FIGURE 1—SIMPLIFIED ONE-LINE DIAGRAM of Bowaters Power Distribution System, equipped by General Electric Co.

A "SPECIAL" ABOUT BOWATERS TENNESSEE MILL—

"How" and "Why" of Electrical Features

"To be in on design of new mill is paper man's dream"—what were reasons behind selection of equipment?

By M. J. OSBORNE
Electrical Superintendent
Bowaters Southern Paper Corp.

• To be in on the design of a brand new mill is unusual and a paper mill man's dream; it is, also, a big responsibility.

We kept in mind two factors while we were laying out the electrical distribution system for the new Bowater's Southern Paper Corp. mill (kraft pulp, groundwood, newsprint, at Calhoun, Tenn.):

(1) Selection of the best equipment, power-system arrangement, etc., but on the basis of sensible economics, and

(2) Selection of standardized equipment, rating, sizes, etc., in the interest of speed of procurement, availability, spare parts and cost.

Modern accepted practices were incorporated throughout, as will be outlined in this article.

Our load data—the basis of the selection of ratings—was based on information and actual data from our Corner Brook, Newfoundland, mill and other Southern mills, along with data typical for Southern wood and

This Story is Sequel to Our Bowaters Mill Feature in January

The most complete story on the $60,000,000 pulp and paper mills of Bowaters Southern Paper Corp., at Calhoun, Tenn., appeared in the Jan. 1955 issue of PULP & PAPER. It featured numerous exclusive PULP & PAPER photographs.

This story by M. J. (Johnnie) Osborne, electrical superintendent of Bowaters Southern, is an interesting sequel to that January feature.

It is a "personal experience" story of the electrical and power side of the big construction job that was done in Tennessee. Mr. Osborne was one of the key men who worked with K. O. Elderkin, vice president and general manager, in planning and directing the vast project.

The "how" and "why" as well as the "what" of the new mill's electrical engineering features are revealed in this article, written especially for PULP & PAPER.

Mr. Osborne frankly states that being "in" on the big job was the realization of "a paper mill man's dream." A native of Florida, and graduate of Georgia Tech, he served under Mr. Elderkin at Crossett Paper Mills, before he went with him to Tennessee.

Actually there were three major stories in January—

One completely described the Tennessee mills which have capacity for 400-tons-a-day newsprint mill; 140-tons-a-day semi-bleached kraft pulp mill and 360-tons-a-day groundwood plant.

Another story, in the PULPWOOD SECTION, told how Bowaters collects and handles $50,000 cords a year for the big mills.

A third story in that issue told how Bowaters grew in 25 years from a small London paper merchant firm, without any factories, to a network of 40 companies, with 10 paper mills in 6 countries and properties valued at $225,000,000.

local conditions. The actual present operating load agrees remarkably closely with our design data. Our present load is approximately 40,000 kw, split about evenly between the grinder load and the mill load.

HOW ELECTRICAL DISTRIBUTION SYSTEM IS ARRANGED—Fig. 1 shows in simplified one-line diagram form the basic power-distribution system. This arrangement was greatly influenced by the contract with TVA, electrically by their transformer bank rating, and physically by the location available for their equipment and the outdoor 154-kv substation, approximately 1400 ft. from the grinder area and 2100 ft. from the power house.

You can see from this diagram that the system is basically a simple radial arrangement, except that some loads are served by a secondary-selective radial system. The radial system is inexpensive and simple to operate—and in our operation, simplicity usually means reliability.

Normal operation is to parallel with TVA, although the loads are such that the mill portion can operate separately from the grinder load.

Details of various portions of the electrical system are shown in Figs. 1, 2, 3, and 4.

Arranged for Future Expansion—We believe we have provided for plenty of load growth in laying out our electrical system. We used the load-center principle of distribution throughout the mill; this is not only the most economical, but permits considerable power expansion, either in our own generation or additional TVA tie line.

By means of a synchronizing bus arrangement, as shown in Fig. 1, we can add several generators or larger transformer tie. The circuit arrangement, electrical ratings, and characteristics were planned and selected for expansion.

The fact that we selected 13800 volts for the backbone of our distribution system simplifies our expansion problem.

Selection of Voltage Levels—It will be noted from Fig. 1 that 13.8 kv is used for the "backbone" of the system—our generation and our TVA tie is at this voltage level. The 13.8-kv level is the logical one for distributing the blocks of load that we have.

The other major mill voltages are 2400 and 480 volts plus, of course, 120 volts for lighting, receptacles, etc.

Note that 4160 volts is used for the grinder area distribution. This raises some natural questions such as:

Why not make the grinders for a 2400-volt operation or else change the mill utilization from 2400 to 4160 volts to match the grinders? In other words, why was this extra voltage level introduced?

The answer is in dollars; the 4160-volt level was selected after an exhaustive study which showed that we saved about $150,000 by our choice. For the mill area, a 2400-volt distribution system proved to be the most practical and also the most economical since there is no operational advantage or duplication of switching equipment realized. For all practical purposes, the grinder load is separate.

Neutral Grounding at All Voltage Levels—Our decision to design and operate this mill with the system neutral grounded at all voltage levels was influenced considerably by our experience at our Corner Brook mill, which is ungrounded. The trend in paper mills, as well as all industry, is for neutral system grounding. (The advantages and operating benefits are beyond the scope of this paper, but this was reviewed by this writer in PULP & PAPER, Dec., 1953.)

The 2400-, 4160-, and 13,800-volt systems are grounded by resistors to limit the ground current while the 480 and lower voltage systems are solidly grounded, as indicated in Figs. 1 through 4.

All of our three-phase transformers are delta-wye connected and the two generators are wye connected so that we could conveniently establish a neutral grounding point.

However, the TVA transformer is wye-delta and therefore not suitable for grounding at the 13,800-volt level. We expect that we may wish to operate the mill at times with the grinder loads electrically separate from the mill load. In order to have

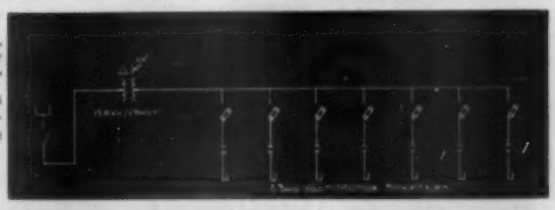


FIGURE 2—ONE-LINE DIAGRAM OF TYPICAL 2400-VOLT SUBSTATION with Limitamp motor starters for paper machine loads.

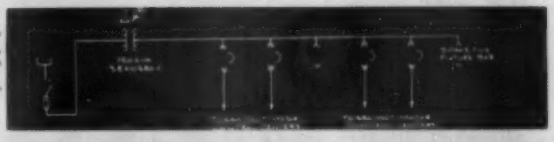


FIGURE 3—TYPICAL UNIT SUBSTATION CIRCUIT FOR 480-VOLT SERVICE.

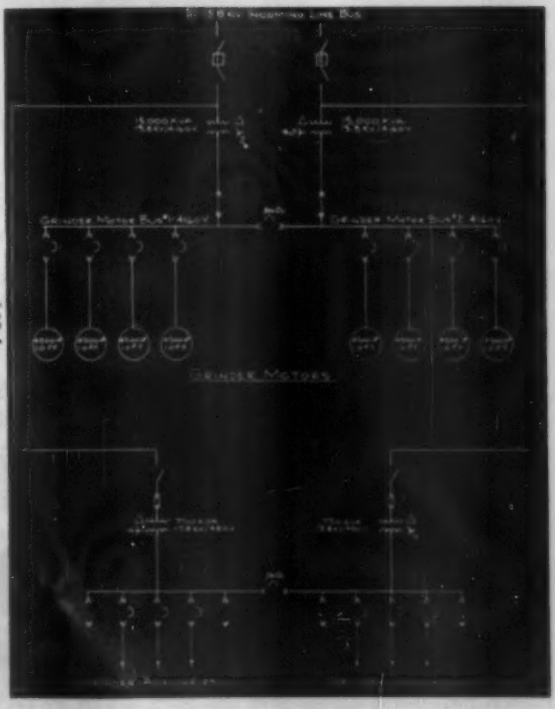


FIGURE 4—DIAGRAM FOR THE GRINDER SUBSTATION.

FIGURE 5—VIEW SHOWING GENERAL ELECTRIC'S NEUTRAL GROUNDING EQUIPMENT in grinder substation. At left is Zig-Zag grounding transformer. On the column is the current-limiting resistor.

a grounded system under that condition, we provided a zig-zag grounding transformer (Fig. 5) to derive a neutral point from the delta system. This also serves as a grounding point in case our own generation is down.

All Breakers and Motor Starters Selected for Adequate "IC"—There was a difficult question that always has to be answered when designing an electrical distribution system:

How much margin should be allowed between the calculated fault duty and the breaker ratings? Our breakers were selected and the system so laid out that the electrical system can be expanded several fold.

All circuit breakers were selected for adequate IC (interrupting capacity). The 480-, 2400-, 4160-, and 13800-volt mill breakers are of drawout construction. In the case of the mill 13800-volt system, we designed this, impedance-wise, so that we could use the maximum rated drawout air-break type of breaker (500 mva at the present). In other words, wherever possible we selected the drawout type of construction for maintenance purposes. The 13.8-kv switchgear at the grinder sub is rated 1,000 mva and is of the outdoor, oil circuit breaker type.

Every effort was made to protect transformer and breaker bushings from atmospheric contamination. This protection is especially important around paper mills to avoid bushing flashover and interruption of power. The grinder substation was purposely located in an alcove under the grinder motor room as shown in Fig. 5.

All power transformers are liquid filled; the indoor ones are pyranol-filled and the two grinder substations are oil-filled. (Liquid-filled transformers have approximately twice the insulation level of dry-type transformers.) All motor starters have adequate "IC." The 2300-volt motors are controlled by Limitamp starters while the 4000-volt grinder motors have switchgear type combination starters.

We wanted the mill load-center unit substations of the same rating if possible; as it turned out, it was practical and now we have only one transformer as spare for these 22 units.

M. J. OSBORNE His article specially written for PULP & PAPER, tells the electrical engineering "thinking" behind 400-ton newsprint mill in the big Tennessee public power area.

The other substations, being few in number, were selected to match the load but with some allowance for load growth.

The impedance of the grinder transformers is a little higher than normal, but this was specified so that we could take advantage of the economical drawout type switchgear of the 250-mva level. (This is the maximum interrupting rating at 4160 volts.)

The following are ratings of various substations:

Location	Secondary Voltage	Transformer Rating	Number
Mill	480	750 kva	22
Paper Mill	2400	3000 kva	2
Boiler House	2400	2000 kva	2
Grinder	4160	15000 kva	2
Stock Preparation	2400	2000 kva	2
Raw Water Station	2400	2000 kva	1

Typical installations of substations and switchgear throughout the mill are shown in Figs. 6 through 10.

TVA Tie—We buy approximately half of our power, at the present time, from TVA; this block is for the grinder load. As shown in Fig. 1, the incoming lines from TVA are 154 kv and TVA steps this voltage down to 13.8 kv to match ours. Fig. 7 shows the grinder-TVA substation. Normally, we expect to operate in parallel with TVA. We have relaying to isolate our mill from TVA or the grinder load in case of fault.

We have space provision in the circuit from the substation to our mill generation bus for a step regulator in case it becomes necessary to add it to control voltage or reactive current.

Centralized Control—Control and instrumentation is receiving considerable attention in the paper industry. We carefully selected the instrumentation and control on the basis of (1) operating simplicity and (2) actual benefits to be obtained from provision of record information. The control, instrumentation and relaying of the major circuits and loads is provided on a Duplex control board shown in Figs. 11 and 12.

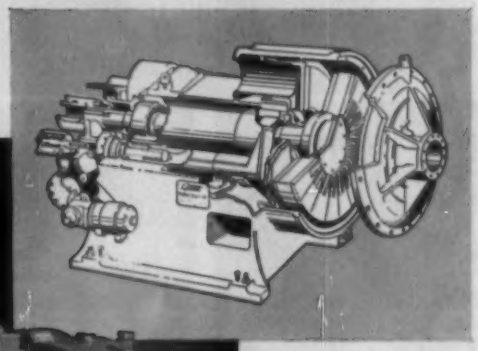
Cable Systems—The selection of cable was in accordance with the present TAPPI recommendation ("TAPPI," March, 1954, p. 81-83). We used varnished cambric interlocked armored cable (aluminum armor with a polyvinyl-chloride jacket) from our TVA substation to the grinder substations and to our 13.8-kv power house bus, and also for our generator and grinder motor leads. Fig. 14 is a view showing the installation features in the run from the substation to the power house. Fig. 13 is a view of the cable run from the mill to the power plant. (We estimate that we saved $20,000 on this construction).

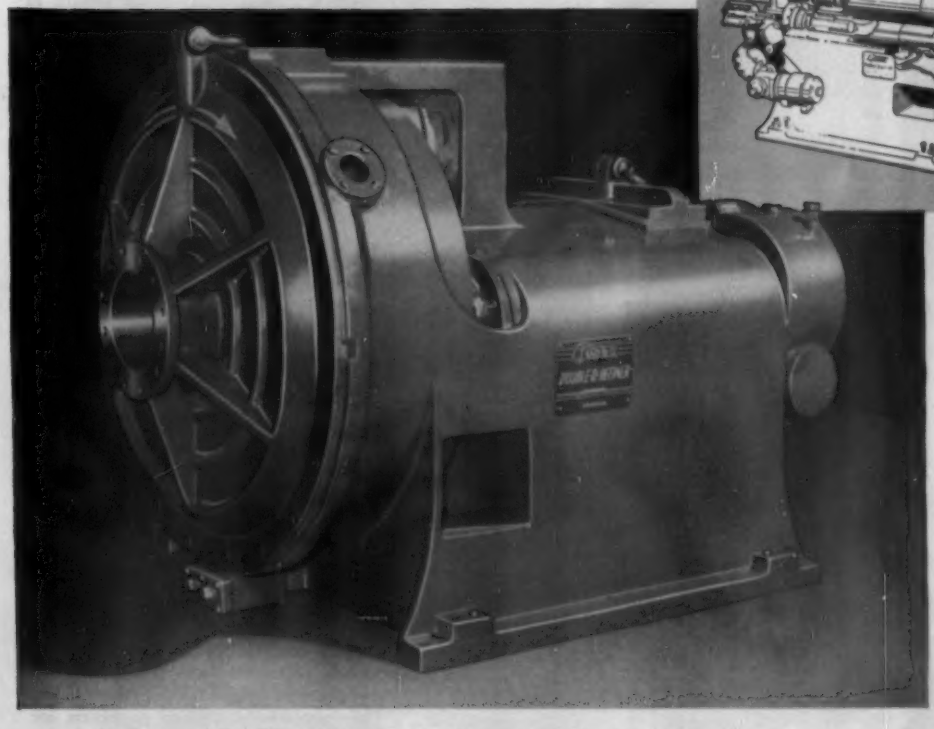
Inside the mill we used the following: 480-volt circuits—Rubber insulated-neoprene jacket in conduit; 2400-volt circuits—Rubber insulated Neoprene jacket in conduit; 4160-volt circuits and 13800-volt circuits—Varnished-cambric insulated polyvinyl-chloride jacket aluminum armor.

The cable installation from the TVA substation to the mill is unique in several

Announcing

THE NEW Jones DOUBLE-D WITH EQUA-FLO





This simplified drawing illustrates how stock flows around double discs, is kept under constant pressure in longer contact with refining surfaces. Fully automatic or push-button controls.

New—and it will make news in the paper industry! A fully pressurized double disc refiner that produces amazing savings in power, floor space and cost because it does the work of *two* conventional refiners.

New—but proven because full scale production models have been in operation in several leading mills for as long as 18 months.

Performance (on hard-to-work stock), simplicity of operation and ease of maintenance under mill conditions have more than lived up to experimental forecasts. Ask your Jones representative for details or write for Bulletin No. 1083.

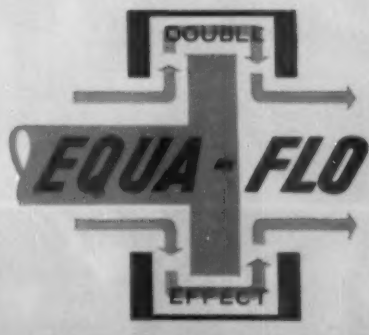


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FIGURE 6—TYPICAL LOAD-CENTER UNIT SUBSTATION RATED 750 kva. View shows air-filled interruptor switch, pyranol-filled transformer, and 480-volt drawout switchgear.

FIGURE 7—GRINDER SUBSTATION TRANSFORMER located in alcove under grinder room. Each transformer is rated 15,000 kva, 13800/4160 volts.

FIGURE 8—TYPICAL LIMITAMP type of motor starter for 2300-volt motors.

FIGURE 9—MAIN SUBSTATION ROOM FOR NO. 1 PAPER MACHINE.

FIGURE 10—VIEW OF GRINDER MOTOR ROOM. On left are eight 4500 hp, 1.0-pf motors, on aisle opposite are motor control cubicles, and at far right, 4160-volt switchgear type starters.

respects, and we think it might be of interest to other mills. The interlocked armored cable is run on racks above the ground near the TVA substation which is remote from the mill area proper. The cables are installed in racks just above the ground such as shown in Fig. 13. As the cable approaches the mill, the cables then enter a surface duct. We do not pull in underground conduit because if a cable must be moved, spliced or replaced, and this generally occurs during emergencies, it would take too long to change and the cost is prohibitive. We elected to put the cables in a steel-covered cable trough on the surface of the ground (see Fig. 16). The cable is easily pulled in racks supported above the bottom of the trough. Duct covers are made in removable sections. The trough is well drained so water is not a problem.

Relay Protection—Relays were selected and a relay study was made to obtain relays and settings which would give the best possible protection to the system and equipment from high short-circuit and ground fault currents anywhere in the system. The relays are so connected as to give in all cases over-lapping zones of protection and by different types of relays.

Throughout the system differential relays have been used to get rapid clearance of faults without disturbing the rest of the system. The areas of differential protection include the four buses, the tie line, grinder motors, 15,000 KVA transformers and generators.

In addition to this primary relaying, there is backup relaying which relies primarily on overcurrent relays. Overcurrent relays have been provided in all primary feeders from the four buses to furnish protection from phase to phase and phase to ground faults in these fields. They also furnish backup protection for fuses and other relays in the branch circuits fed from the primary feeders.

The individual grinder motor circuits are also protected by phase balance current relays.

Decrease in frequency on Bowaters 13.8 kv bus will operate an under-frequency relay, which will open breakers to dump grinder motor loads.

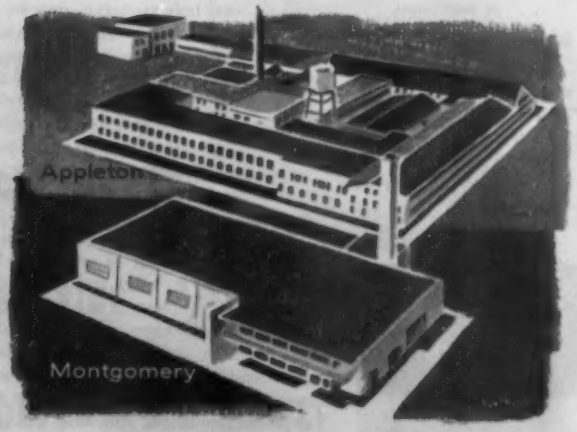
Overcurrent relays to detect ground fault currents have been connected in all resistance grounded circuits.

AC thermal relays operated from thermal detectors in the motor are used to protect the 4500 hp grinder motors.

Overcurrent relays with voltage restraint are used as backup protection for the generators.

Since most faults start as a ground, we expect our ground relaying—which is set low and is independent of the circuit loading—to catch most faults. Since we limit our ground current on the high-voltage buses, we don't expect a fault to

Paper helps build 'em clear up to the sky



General Offices, Appleton, Wisconsin

Plants at Appleton, and Montgomery, Alabama.

From Main Street to Forty-Second, wherever house or office starts to climb, paper is on the job from the first whistle. In wallboards and floorboards—insulation, conduits, asphalt shingles... even in composition floorings, desk tops, and furniture when the tenants move in. Paper... essential ingredient of consistently better, more varied, and highly specialized materials—indispensable to modern building everywhere.

And in at the very start of paper for building—in every field where paper goes to work... Fourdrinier wires. Appleton Wires. Good wires—by a 59-year test of industry-wide acceptance and use.

Appleton Wire Works, Inc.

cause much damage; with a grounded system relaying is speeded up.

HOW GROUNDWOOD MILL IS EQUIPPED—Eight 4500 hp motors drive 8 Waterous-Great Northern pulp grinders (total capacity, 360 tons a day of groundwood.) Each motor is direct coupled to a single pulp stone, 67 in. in diameter by 69 ft. long, capable of grinding two cords of 5-ft. wood per hour. Motors, associated switchgear and auxiliary electrical equipment are located in a separate room adjacent to the grinder room, as shown in Fig. 10. Drive shafts extend through the wall to the grinders.

Grinder Motors Described—The motors are rated 4500 hp, 240 rpm, 4500 volts, 1.0 pf. They start on full voltage from a 30,000 kva double ended master unit substation supplied from the mills 13.8 bus.

The motors are totally enclosed, self-ventilated and equipped with water to air surface coolers. The air coolers are located in individual pits directly below each motor. This construction was selected because the cooling and ventilating requirements of the grinder motor and switchgear room could be substantially reduced, again permitting a considerable saving in first cost. Rotor fans draw air from the pit through the motor end shields and discharge it through the surface air coolers back into the pit. Aside from reducing the ventilating requirements of the motor room, this arrangement minimizes the amount of dirt deposited in the motor and reduces corrosion because the same cooling air is continuously recirculated.

Excitation for each motor is supplied from individual 20 kw motor-generator sets. Several bulk excitation systems were investigated for the grinder excitation system. However, the individual exciters were selected because they proved to be less costly, more flexible and more reliable than any adequate bulk excitation system. Individual rotating exciters also permit adjustment of motor power factor from the exciter field rheostat with the motors running.

The motors are coupled to the grinders through a long shaft (4 are 15 ft. long, and 4 are 30 ft. long) and conventional gear type couplings. As a result of temperature changes and unavoidable misalignment, it is possible to transmit considerable thrust to conventional motor bearings with this type of coupling. Consequently, sufficient end wise movement has been provided for the motor rotor so that the shaft could not contact the ends of the motor bearings for any position of the coupling.

Grinder Load & Master Governors—An adjustable regulating wattmeter governs each of the individual grinder motor

loads by varying the water pressure on the pressure feet which press the pulpwood against the stone.

A master governor consisting of two units, a regulating wattmeter and a variable reactance unit, operates in much the same manner as the individual governors to control the total grinder room load. These governors were manufactured by Koehring-Waterous, Ltd.

HOW JORDANS AND PAPER MACHINES ARE POWERED—The jordans are powered by 350 hp 1.0 pf synchronous motors and equipped with load-sensitive plug adjusting regulators. This regulator automatically adjusts the position of the jordan plug so that constant motor load is maintained. The plug motor of the squirrel cage induction type is controlled by a reversing starter which operates as a function of a contact-making ammeter.

The jordan motors were designed to accommodate the thrust which can be transmitted through the coupling to the motor. Thrust bearings were provided on these motors for this application because the jordan shaft must move axially several inches during the life of the plug. Because of the size of the motors and because the plug is subjected to more frequent movement—the motor bearings are designed for 1500 lbs. continuous thrust in both directions. The motors are equipped with sleeve bearings to carry the radial load and an outboard ball thrust bearing at the collector end to carry the thrust loading. This arrangement provides high thrust capacity, facilitates bearing replacement and simplifies rotor removal.

Medium Voltage Motors—Jordan motors and all other motors above 200 hp are rated 2300 volts. This voltage was selected because it proved to be most practical and least costly. Also, there was no operational advantage or duplication of parts to be realized by expanding the 4 kv level which is concentrated in the grinder room. Space heaters are installed in the end bells of all large dripproof motors so connected to keep the motor enclosure warm and the windings dry when the motors are shut down.

Synchronous Motor Excitation—Individual selenium rectifier ac-dc conversion units are used to supply excitation to 25 medium voltage synchronous motors. The rectifiers range in size from 5 to 10 kw and supply excitation to motors up to 400 hp, wherever frequent adjustment of the motor excitation is not essential. The rectifiers together with adequate short circuit protection and magnetic control are combined in a single package, such as shown in Fig. 13. They are energized automatically when the synchronous motor is started. This eliminates the need for an electrician to pre-start the exciters as is usually done with M/G sets as a safety precaution. The rectifier conversion units are less costly to install than comparable rotating exciters and offers promise of less costly maintenance because they are static devices—void of bearings, commutator and brushes.

Paper Machine Drives—The two 2,000 fpm newsprint machines (252 in. Beloit Fourdriniers—total capacity—400 tons daily) are powered by sectional electronic drives.

Each machine has 17 dc main drive motors totaling 2090 hp supplied by 17 dc generators and amplidyne generators totalling 1615 kw. All motors except those for the dryer section are rated 550 volts. One M/G set is used to power the wet end of the paper machine and a second to power the dry end. Each is driven by an 800 hp .8 pf 2300 volt synchronous motor. Two M/G sets were used to permit the shortest practical cable runs and to provide the maximum flexibility for inspection and maintenance of the paper machine as a whole.

The drives for the wet end can be completely de-energized for electrical maintenance while the dryers, calender and reel can be run on slow speed or at any operating speed to facilitate machine maintenance. Likewise, when clothing changes or mechanical repairs are being made on the wet end, all dry end drives can be taken out of service for electrical repair or inspection. Provision is also included for jogging or operating any section of the paper machine at slow speed with all of the electronic regulators taken out of service for testing or repair.

It is expected that this machine flexibility will materially reduce machine outage time through the use of an effective maintenance program, utilizing to the fullest extent the entire mill crew.

The wet end of the machine is equipped with a suction pick-up to automatically transfer the sheet from the wire to the press. Nine motors power and maintain precise speed control of the key rolls which essentially combine the wire and two felt sections into a single operating unit. Adjustment of either speed or load is provided for each motor to give the greatest operating flexibility. The felt and wire sections are independently speed regulated. However, changes in speed of the entire wet end unit can be made from a single operators' draw rheostat.

Electronic differential speed relays monitor the speed difference between the felt and wire sections. This relay (1) prevents the suction pickup roll from being lowered into contact with

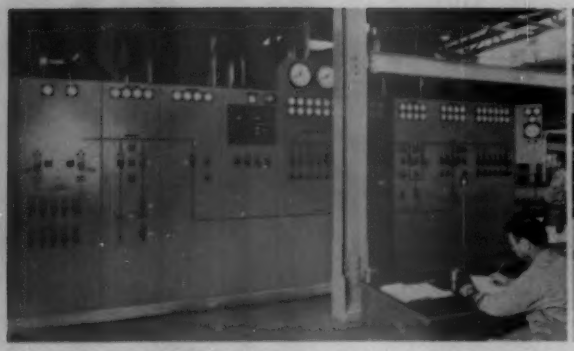


FIGURE 11—FRONT VIEW OF DUPLEX BOARD where control and instrumentation of all major circuits are located.

FIGURE 12—BACK VIEW OF DUPLEX CONTROL BOARD showing relaying and metering.

the wire if more than a preset difference in speed exists between the two sections and (2) automatically raises the pickup roll if the speed differential changes for any reason more than the set amount.

The dryer section consists of 55 paper and 11 felt dryers with four indriving shafts. Each indrive is powered by a 200 hp motor. The four motors are each rated 230 volts and are connected in a series loop with two 300 kw, 500 volt dc generators. A single electronic amplifier regulates dryer speed by simultaneous control of both generators.

This arrangement assures an even distribution of load between the four motors without attention from the operator under all operating conditions and reduces the amount of control equipment required.

The individual sections are controlled by high accuracy fast response electronic-amplidyne regulators. The regulators are similar in principle to others supplied for over 110 paper machines since World War II, but include many improvements and refinements resulting from the accumulated experience of over 20 million hours of operation. The accuracy has been improved, adjustment made easier, maintenance simplified and reliability improved.

Improved slow speed (jog reverse) and accelerating characteristics are provided on the individual section drives. This provides softer starts and smoother acceleration. The accelerating time is adjustable over a wide range to give the optimum accelerating characteristics for each section regardless of load inertia. Slow speed is electronically regulated and may be adjusted to an extremely low value to simplify spotting of the felts and wire. Fast stopping, particularly important on the large heavy inertia dryer section, is obtained by regenerative braking.

The regulators control instantaneous roll speed at the wet end of the machine and provide extremely fast response. This is particularly desirable for optimum performance of the wire section which is subject to fast load changes. Differential speed indicators calibrated directly in fpm continuously indicate the draw between the wire and the transfer press and between the transfer and the main press. Tension control as well as speed control is provided for the dry end sections. Actual sheet tension is controlled between the calender and the dryer by a paper tensiometer through the electronic-amplidyne regulator.

Once the sheet is secured in the calender practically no attention or adjustment is required of the draw regardless of changes in stock freeness, shrinkage, loading on the calender or tension changes in the sheet leaving the calender. Tension is controlled at the reel by an over-riding current regulator, again through the electronic amplidyne speed regulator. The simpler current control is acceptable on the reel because there are no following sections to affect the tension, and the friction and working load is uniform and low by comparison to the tension load.

Overall machine speed is electronically set and controlled from a single rheostat located on the control bridge. The master speed control system is more reliable, has greater flexibility, better accuracy and surpasses considerably the performance of previous units. The operators' dial is a 25 turn rheostat for precise setting of machine speed and for fine resolution for making small speed changes, accurately. The speed change is smooth and stepless. There is no backlash. The resultant speed is exactly the same for any rheostat setting whether the operator

FIGURE 13—INSTALLATION FEATURES OF 13,800-VOLT INTERLOCKED ARMORED CABLE run from TVA substation to power house. Note cable rack above ground.

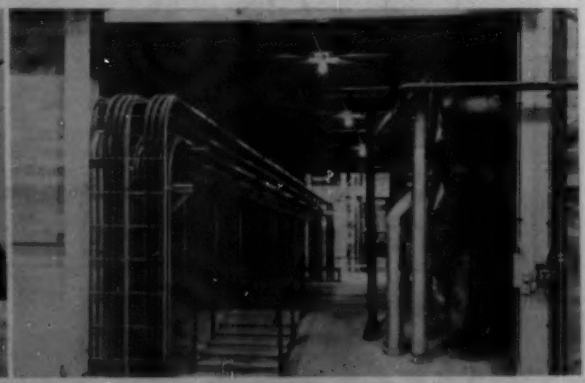


FIGURE 14—VIEW SHOWING TYPICAL INSTALLATION FEATURES for indoor interlocked armored cable.

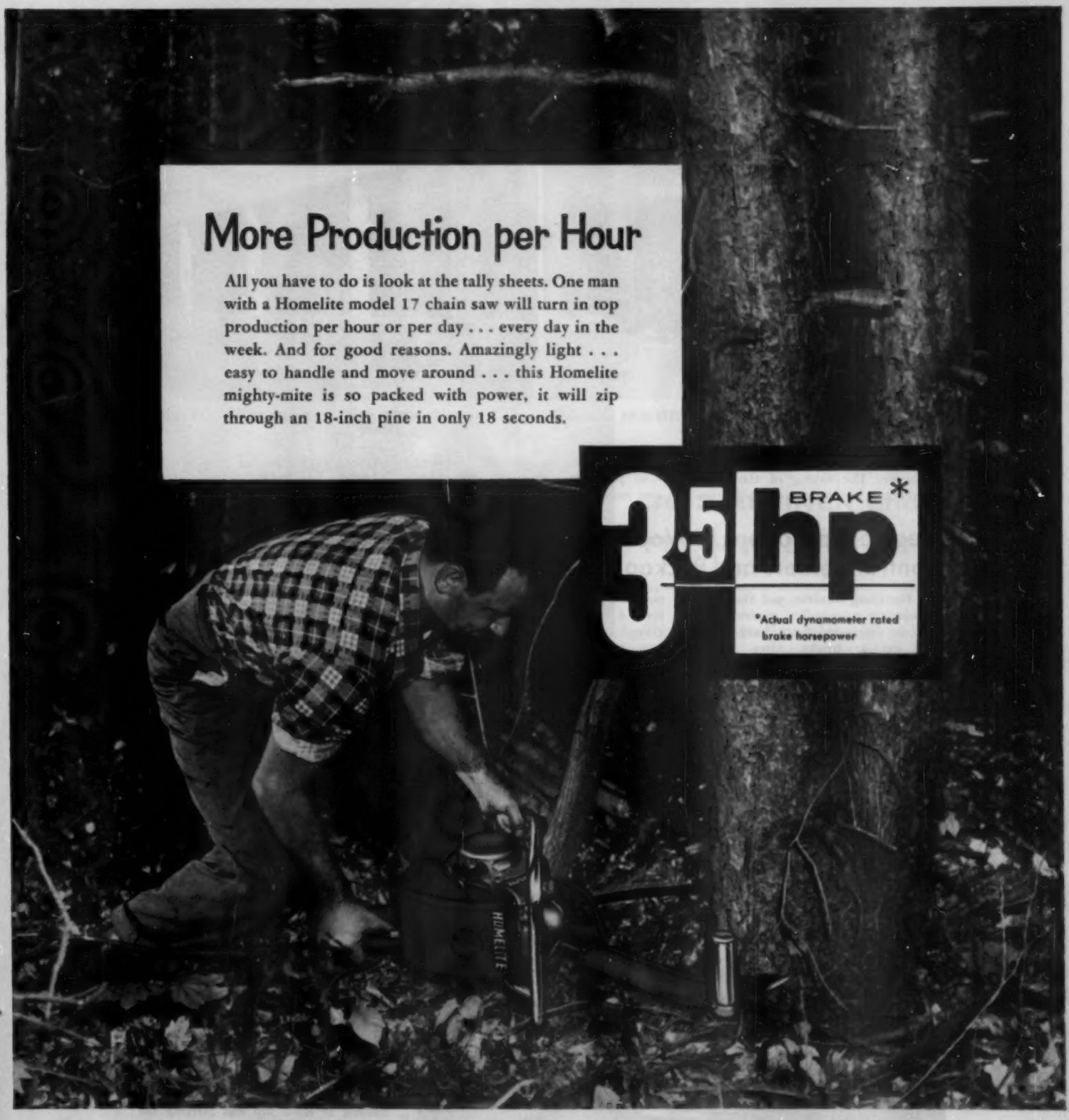


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FIGURE 15—TYPICAL SELENIUM RECTIFIERS supplying excitation to 400 hp Nash vacuum pumps.

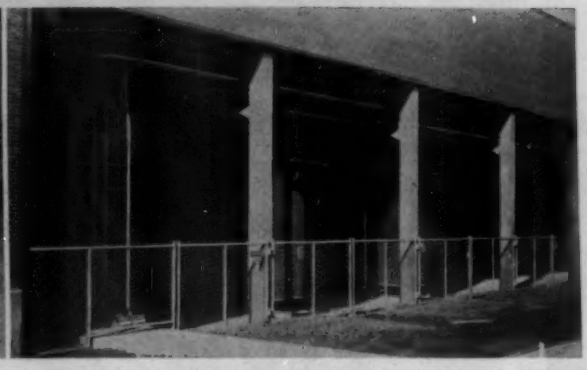


FIGURE 16—VIEW OF INTERLOCKED ARMORED CABLES in cable trough.

turns the dial clockwise or counter-clockwise. The timing of the speed change can be set from 2 to 20 minutes for 100% speed change. (*Ed note —All preceding electrical equipment was manufactured by Gen. Electric.*)

Electric Operations in Wood Yard; Control Centers and Package Units

Log Handling Gantries and Stackers— An electric man-trolley gantry crane unloads pulpwood from barge, railroad car or trucks. After passing through drum barkers, the logs are placed in two semi-circular ponds for underwater storage. These ponds are in a man-made crater 474-ft. in diameter and 41 ft. deep. Each pond has a storage capacity of 15,000 cords (together, enough to run the mill 6 weeks). To meet demands of the mill, logs are reclaimed by electrical gantry cranes from the pond for use in the groundwood mill or the kraft pulp mill (the mills consume 250,000 cords a year).

The pond gantries are equipped with man trolleys, although with the intended automatic operation there will be no regular occasion for an operator to ride in the cab. The log grapples consist of four arms connected by sections of chain to form a sort of net around the logs. These grapples weigh 7000 lbs. and have a capacity of 1.5 cords. These are conventional two motor bucket hoist machines with independent drives for the hold and close lines. These drives will operate the grapple at 210 fpm.

The motors for the hoist, trolley, and bridge travel drives are of the wound rotor type operated from 440 volts, 3 phase, 60 cycle supply.

These motors carry the following ratings: Close—100 hp; Hold—40 hp; Trolley—40 hp; Bridge—10 hp.

The unique operating characteristics of the grapple account for the variance of these ratings from the usual pattern for buckets in which the hold and close motors are duplicate. The grapple, when hoisting load, must be supported almost exclusively on the close line. This is necessary to prevent even one log from slipping. Should a key log be released, the entire grapple load might slip out between the arms and chains. In lowering, the grapple must be supported exclusively by the hold line in order to assure its being open to the maximum reach to engage the logs. Thus, the close motor does all the hoisting work and the hold motor the lowering work. This explains the variance in the ratings of the two machines.

The motors are provided with dc operated shoe brakes. Full magnetic counter torque control is employed for the grapple hoist drives while reversing-plugging control is used for the trolley. Automatic or manually controlled operation will be available at the operator's option.

The required load division between the hold and close drives is obtained by combining electrical and mechanical design features. Mechanically, the ratios between the drums and motors are slightly different for the two drives. This can be understood by the following data:

	Grapple Speed
Hoist	210 fpm
Lower	216 fpm
	Close Motor rpm
Hoist	870
Lower	895
	Hold Motor rpm
Hoist	900
Lower	925

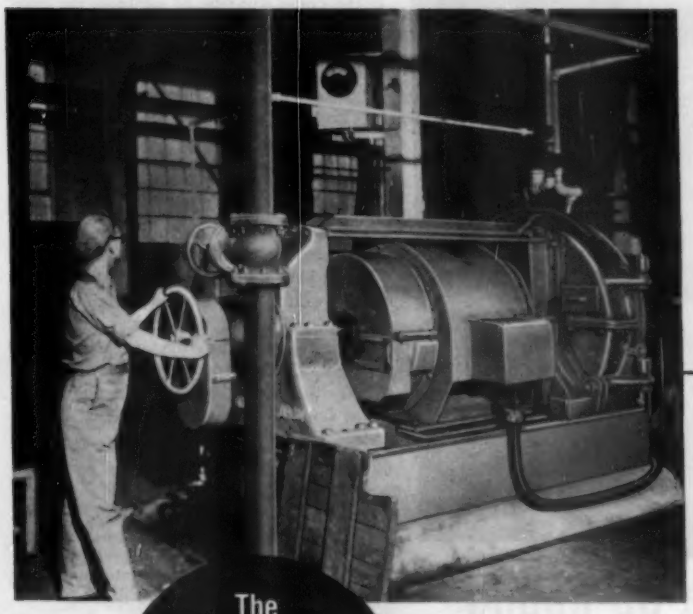
Thus, in hoisting, the close motor is running at rated slip and carrying the load, while the hoist motor is running at approximately synchronous speed and producing little if any torque.

By contrast, when lowering, the hold motor is operating at rated slip (negative) as an induction generator and provides the retarding torque while the close motor operates at near synchronous speed to pay out rope. To avoid the hold motor assuming load in hoisting if a heavier than normal grapple of wood is lifted, the hold motor is operated with secondary re-

GIANT LINK-BELT GANTRY CRANE, powered by Westinghouse motors, unloads pulpwood from river barges at Bowater's Tennessee mill.

for economical semi-chemical pulping

RICHMOND PULP & PAPER CO. of CANADA, LTD.



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SPROUT-WALDRON 36-2 REFINER and FEEDING SYSTEM

Richmond—the first newsprint mill in Canada using hardwood neutral sulphite semi-chemical pulp—uses a 450 h.p. Sprout-Waldron 36-2 Refiner. Pulp is made from aspen and birch. The semi-chemical pulp refiner is fed by a Sprout-Waldron Uniflow Feeding System. Richmond also uses another 450 h.p. Sprout-Waldron 36-2 Refiner to refine groundwood rejects into a strong, fibrous pulp.

The SPROUT-WALDRON refiner is the leading producer of semi-chemical pulp

Single rotating disc design with peripheral control ring plus rugged construction for . . .

High Pulp Quality — **Flexibility of Operation**

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For more information on semi-chemical pulping, or any other pulping application, send for our file of technical and practical data.

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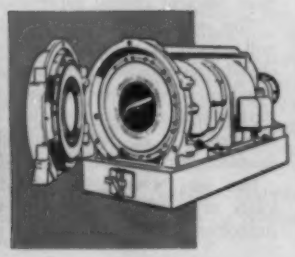

for your pulping problem—

SPROUT-WALDRON

PULP REFINERS

sistance to give it 30% full load capacity at rated slip. This, together with its rating of only 40 hp, effectively has "throttled back" the hold motor during hoisting.

In supervising automatic operation, the operator will predetermine the digging point by locating the gantry and setting the trolley control lug. This latter is a motor-driven, rope-operated, tripping lug which can be moved along the length of the crane structure to establish the position where the trolley stops and the grapple is lowered. These two adjusting features will permit the operator to locate the digging points much as he would with a set of polar coordinates—along a certain radius and a given distance from the center.

The logs are placed in the pond by a stacker which, like the reclaiming gantry cranes, rotates about the center "island." To prevent damage to either piece of equipment when the stacker passes under the gantry, interlocking switches stop travel motion of both pieces of equipment when an interference zone is entered. Further travel is permitted only after the trolley has reached a point over the hopper where it is demobilized until the stacker has passed.

Automatic operation will be undertaken under a group of very favorable conditions. The existence of these conditions was a major factor in influencing the development of this drive equipment:

1. The logs are under water and the operator could not observe digging.
2. Logs are in a random arrangement further adding to the hit or miss character of digging even with an operator.
3. There is no need to lower the grapple at a precise spot to avoid damage as in digging from the hold of a vessel.
4. Since the logs will slide toward a low spot, digging can continue in one location for a long time.
5. The logs are dumped at a fixed location every cycle.

When we go to the automatic operation of these cranes, we will add to the improvements in yield mentioned earlier the further advantages of performance independent of human fatigue factors, and relieving the operators of the monotony of repetitive cycle operations.

Control Centers—Centralization of 440 volt control allowed more economical use of space, installation economy, clearance of work areas, reduction of hazards and more efficient control supervision.

The control centers installed in this mill consist of a number of totally enclosed, free-standing structures mounting metal-enclosed combination magnetic starters with necessary bus, bus supports, terminals and associated equipments, assembled, installed and connected.

Bus bars were silver plated at the joints of rectangular cross section and supported in each structure by means of

Rosite bus supports. Rosite was used because it is a non-carbonizing and non-tracking material.

Combination starter units of the fusible type are interchangeable combinations of 14 in. modular heights and all units are the line plug-in type except the size 5 units. The size 5 units contain circuit breakers rather than fusible disconnect switches.

Supervisory control using two pilot wires is used at the water filter plant to control four river pumps located almost three miles from the mill.

Adjustable Voltage Drives—Packaged direct current units are used to power the direct current drive motors for deckers, brown stock and bleach plant washers, broke thickeners, and rewinder.

The power units are enclosed in steel cabinets having oiled fiber glass filters to insure clean ventilating air. Each unit includes a motor-generator set and a completely wired control panel.

The control panels include overload protection, a D.C. line contactor, selenium excitation, field discharge resistors and provide regenerative braking on speed change.

Dual element speed control rheostats provide constant torque speed range by armature voltage control over a motor speed range of 575 to 1150 rpm and constant horsepower speed range from 1150 to 2300 rpm by field control.

The totally-enclosed fan cooled dc. drive motors are equipped with prelubricated sealed ball bearings.

Mill Auxiliary Motors—General purpose motors through 200 hp are 440 volt, 3 phase. Approximately 86% of the general purpose motors are of the totally-enclosed chemical type. Totally-enclosed motors are used through 150 hp.

The steel enclosure motors are given special treatment to resist corrosive fumes and liquids which consist of Bonderizing, a coat of formaldehyde-alkyd type enamel, followed by two coats of thermoset varnish and a final coat of gray lacquer. In addition to the special protective treatment given the enclosures, cadmium plated bolts, cast iron terminal boxes and rotating neoprene flingers were also provided. Totally-enclosed fan cooled motors have corrosion resistant bronze external fans. Motors through frame 327 have steel enclosures. Motors having frame sizes 364 and larger (15 to 150 hp) are type CS chemical motors and have cast iron frames, brackets and terminal boxes. To prevent the entry of liquids into the motor enclosures, fits between the frame and brackets are sealed with a special grease. The windings were given two extra dips and bakes of thermoset varnish to provide additional protection against moisture.

(Ed. Note—Electrical equipment described in the preceding section was by Westinghouse Electric Corp.)

Pulp Dryer Drive Has Interesting Features

The pulp dryer drive has several interesting features (this J. O. Ross air dryer processes all of the mill's capacity of semi-bleached kraft pulp —up to 140 tons a day).

This Reliance Electric & Engineering Co. drive is a simple paper machine drive of the Ward-Leonard type with a single running generator and speed control of the sections by dc motor field control. The vacuum forming cylinder is the lead section of the drive.

Driven entry pull roll and exit pull rolls assist in feeding the sheet into the dryer and taking the sheet from the dryer. Between the second press and the entry pull roll is a dancer roll and rheostat that controls a booster generator in series with the conveyor motors and pull rolls. This booster speeds up or slows down the entire dryer system to take cure of slack and minimize the number of breaks in the sheet.

Speed of the first press is controlled by a VSR electronic speed regulator. The speed of the other sections is controlled by dancer roll rheostats with the necessary sprockets, chain and mounting brackets. These dancer roll rheostats are positioned by dancer rolls furnished with the machine and speed up or slow down the various sections as required. Because the dancer roll rheostats for eight of the nine pulp conveyors are located out of sight of the operator, position indicators have been supplied on the operator's bench board so that the operators can see that each of these rheostats is in operating range. The cutter has a manual control.

The main variable voltage generator is regulated by a VSC electronically controlled exciter. The VSC incorporates features of pre-set speeds and controlled acceleration and deceleration.

Winder Drives—The variable speed Beloit winders after both newsprint machines winders have a straightforward variable voltage direct current Reliance system. The output voltage of the main 125 kw generator is regulated by a VSR electronic voltage regulator. The two 75 hp drum motors are connected directly to the main generator armature, the rider roll and slitter motors are connected through booster generators.

Newsprint, because of its low tear strength, has low permissible winding tension. These drives have been designed to be as "soft" as possible. A paper machine between sections can be thought of as having "stiff" or rigid regulation. The regulator on these winders make smooth changes without forced or high rate change of current in the winder motors. The Beloit brake on the unwind stand. These winders wind very satisfactorily without breaks at 5400 fpm.

Regenerative braking is attained to a full stop.

Miscellaneous Electrical—The handling of pulp sheets through the scales and press, the handling of pulp bales, and the handling of newsprint rolls in this mill can be considered as automation. This automation is effected by means of a number of photoelectric relays, limit switches, elevators, conveyors, stackers and kickers. The two companies involved in these conveying equipments are Lamb Grays Harbor and Lamson Corporation.

Acknowledgements—The writer wishes to thank Messrs. W. C. Bloomquist and C. D. Beck of the General Electric Co., and S. T. Bates of Westinghouse Electric Corp. for their assistance.

World's Widest Felt Loom

F. C. HUYCK & SONS has recently put into operation this 680 in. loom, the world's widest, capable of weaving felts up to about 340 in. The all external drive gearing is fully enclosed to doubly safeguard grease or oil contaminating the material.

Everett Solved Water Problems

There's plenty for 1,400 tons of pulp per day but 2 of 4 big mills needed special intake facilities

● Four pulp and paper mills and 35,000 residents in Everett, Wash., consume nearly 150 million gals. of water per day. This huge volume provides the claim for Everett of the highest per capita consumption of water in the U. S. The mills make about 1,400 tons of pulp per day and about 360 tons of paper.

The availability of such large amounts of water is no particular problem in itself. In the transmission and intake of this daily figure, however, certain problems have been met and solved. Intake facilities of the two mills which depend upon nearby river water are described here.

Weyerhaeuser Timber Co.'s new bleached kraft pulp mill and modified kraft pulp and paper mill of the former Everett Pulp & Paper Co., now Simpson Paper Co., are located contiguous to the city but obtain their water from the Snohomish River. (Located across town on Everett's Gardiner Bay are Scott's pulp and paper operations and the Weyerhaeuser sulfite pulp mill, both on salt water.)

Because the Weyerhaeuser kraft pulp mill is situated so close to the mouth of the river and its confluence with the ocean salt water of Puget Sound, the company chose a spot several miles upriver for an elaborate intake and pumping station. Five miles of 42-in. pipeline was laid to conduct the water to the mill.

The problem for both this kraft mill and the Simpson mill was to insure an adequate supply of clean water, removing all forms of debris at the intake and at the same time meeting conditions set up by the state of Washington for protection of fish fingerlings.

Both mills met the problem by installing traveling water screens. These were standard Chain Belt Rex screens, similar to types in use in domestic and industrial water supply systems.

COST VARIES WITH TIME IN USE—The cost of operating a traveling screen varies with the time they are actually operating. Under favorable stream conditions, the screens can stand still. When the stream contains excessive amounts of debris at certain periods of the year they may run continuously. When PULP & PAPER visited the Simpson Paper Co. plant, the screen was running 1½ revolutions every 4 hours.

The plant engineers determine the number of desired revolutions at any interval and set controls remotely.

A special mechanical feature of the Rex screens is the "balanced drive," which will start the screen under a calculated load equal to at least 2 ft. 6 in. headloss through the screen at the maximum anticipated water level. The drive is a Falk mechanical drive and is connected through a shear pin to the main drive sprocket.

The screen is a special copper wire with ⅜ in. openings. All roller, bushings, and pins are stainless steel, as are the 6 tooth liners on the head sprockets. These can be replaced with a single procedure after wear requires it.

As the screen is revolved, it is cleaned by spray nozzles which cover the entire screen width and wash off all foreign material, not only off the

Pure Mountain Water

Headworks of the city of Everett's Sultan River water source is here, about 25 miles due east of the city in the Cascade range. Diversion dam in background. (Photo by Granville Paine, Everett's City Water Supt.)

How Weyerhaeuser Kraft Mill Screens River Water

(Left) Five miles up Snohomish River is this intake facility for Weyerhaeuser mill. (Center) Semi-enclosed housing on intake side of Chain Belt Rex traveling water screens. (Right) Three large 300 hp 1160 rpm General Electric motors turning three Bingham pumps, each capable of delivering 9000 gpm, with 90-ft. head. Two smaller vertical pumping units, visible in-between, are 20 hp G-E, delivering 300 gpm of spray water for cleaning Rex screens. On screens are small 5 hp electric motors working through 4 speed drive and herringbone reducers to head shaft.

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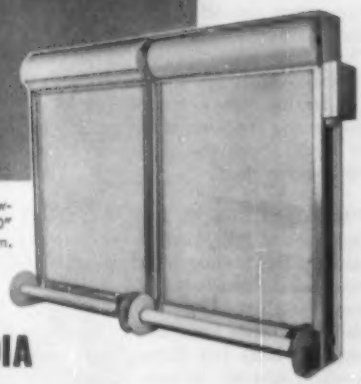
5 Ft. Wide and

1 YEAR LONG!



THE MAGIC ROLL-O-MATIC! Front view of renewable media filter consisting of two 5'0" wide by 8'0" high sections having a total capacity of 26,700 cfm.

AAF Roll-O-MATIC

OPERATES FULL YEAR ON SINGLE ROLL OF MEDIA

PICTURED above is a 5 ft. wide, 70 ft. long renewable media filter curtain for the new AAF ROLL-O-MATIC. When wrapped on a spool, this "blanket" of bonded glass fibers becomes a roll only 13" in diameter.

But here's the maintenance "miracle"! This single filter curtain, installed in a ROLL-O-MATIC section up to 11 ft. high (18,000 cfm) represents a full years supply of media under normal operating conditions. Its cost—just half that of disposable filters of equal capacity and you haven't spent that first man-hour dollar for maintenance.

Simplicity of operation adds further to ROLL-O-MATIC's savings story. Mounted at top of the filter, the media travels as a continuous curtain down the face of the unit and is re-rolled on another spool at the bottom. Movement of curtain to maintain desired operating resistance is controlled by an automatic time switch.

For complete information on "clean air by the roll", call your local American Air Filter representative or write for ROLL-O-MATIC Bulletin 248.

AAF herman nelson

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COMPANY, INC.

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How Simpson Mill Cleans River Water

(Above) An overhead view of trash rack which prevents large floating objects from damaging Chain Belt Rex traveling water screen at Simpson Paper. (Left) Upstream side view of Simpson's Rex screen and pump installation. In foreground is Byron Jackson vertical pump which provides the water under 90 pounds pressure for washing screens. It is powered by a General Electric 15 hp electric motor. Large Crane valve in immediate foreground controls outflow of one of the 4 large low pressure turbine pumps below deck.
(Right) A general view of Chain Belt Rex traveling screen installation, showing pipeline to mill. Large vertical Fairbanks Morse propeller pump at right is powered by 100 hp General Electric water, provides screened water to settling basin.

screen but also off the basket lips, so that no dirt is carried over the top. The spray water pump starts automatically with the screen drive unit. The entire screen is built to closer tolerances, the largest opening being no larger than the openings in the wire screen itself.

WHERE SCREENS ARE USED—At the Simpson mill, located right on the banks of the Snohomish River, a single mechanical screen has just recently been installed. The new facility replaces a former installation of turbine pumps which fed through screened boxes. Capacity is now about 50% higher than previously. New pumps as well as new pipes and fittings to tie-in with the increased pump capacities were also installed. Screen capacity is 15,000 gpm, at a flow of 1.58-ft. per second with water depth of 8 ft. and a screen width of 6 ft.

At the Weyerhaeuser kraft mill intake, two Chain Belt traveling water screens comprise the water screening facilities. The station is located several miles from the mill, in a fairly remote farming area where it cannot be examined at will, so it is checked regularly every morning by an employe to make certain all equipment is functioning properly. Capacity is 12,500 gpm per screen.

Besides industrial installations, Rex traveling water screens are used by municipalities in cleaning great quantities of water. On Puget Sound the city of Seattle has 6 screens, installed 25 years ago. Bellingham, Wash., has two screens installed in 1945, cleaning over 50 million gals. daily, 43 mgd going to Puget Sound Pulp & Timber. Ketchikan Pulp Co. has one screen and provision for two more.

CITY SUPPLIES MILLS, TOO—Another water source for Everett mills is the city of Everett and its supply comes from a watershed 25 miles east of the city in a rugged mountainous valley known as Sultan Basin. Year-around precipitation, heavy snow in winter and heavy rains in fall and spring keep it well supplied with pure mountain water.

There is an ultimate possibility of 350 to 400 million gals. daily in the watershed. Current consumption runs about 110 million gals. per day, or 300 gals. per resident per day.

Industrial consumption (largely pulp and paper) amounts to 96 mgd. The city has contracts to furnish Scott Paper Co. with 65 mgd and the Weyerhaeuser mills with 31,000,000 gpd until 1966, at which time costs will be re-negotiated. Present payment is $7.50 per million gals. daily for water actually used. In 1951 when the former Soundview Pulp Co. merged with Scott, additions to the water transmission system were necessary. They consisted of concrete lining of a 7,064 ft. tunnel at a cost of $637,600, and reservoirs to give 24,000,000 gals. added storage at cost of $400,000.

The history of the city water system is closely allied with that of the two mills mentioned above and their development over the years.

As to the watershed itself, it is covered with excellent pulp timber and in the future more and more will be cut under management and shipped to Everett, where it will be made into pulp, using the water that helped the trees grow. Recently the city applied for water rights on the Sultan River to build a new dam and a $20 million pipeline system.

How Water Screen Operates

Phantom view of Chain Belt Rex traveling water screen, as used by Weyerhaeuser and Simpson at Everett. Lower arrow indicates upward travel of the screen "baskets": Upper arrow indicates the direction of flow of the water going through the screen.

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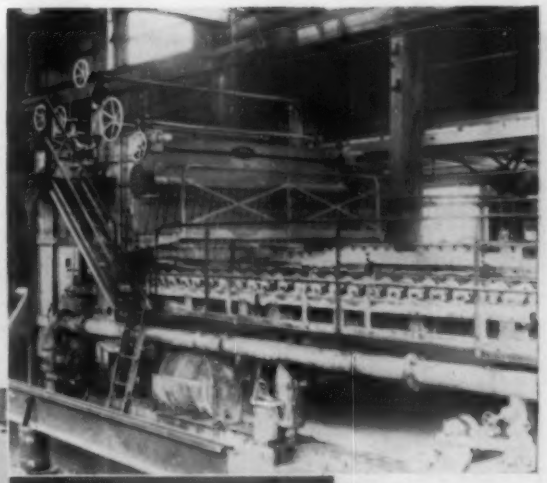

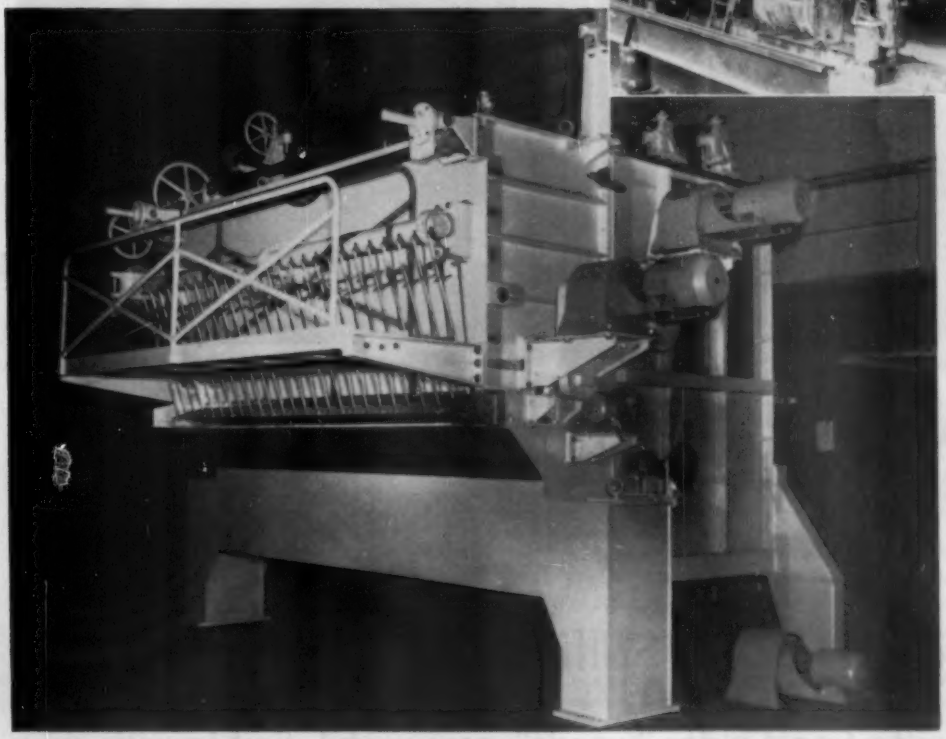

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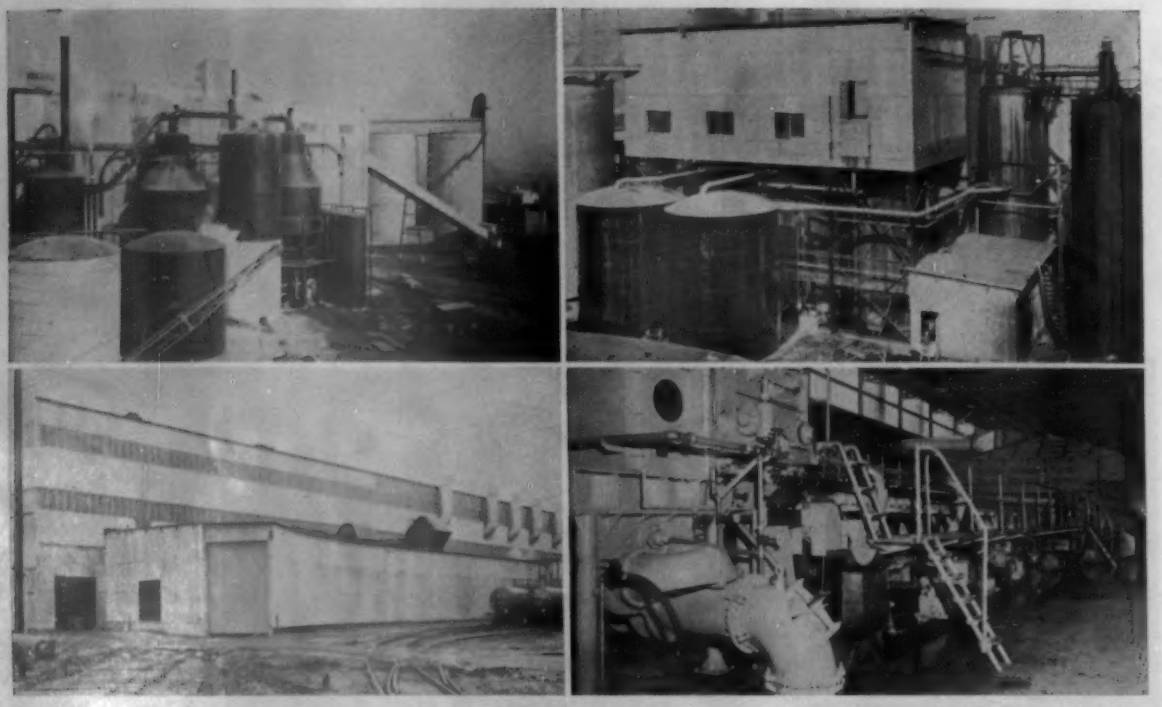

The New Look at Longview

(Top left) Weyerhaeuser additions for making neutral sulfite-semichemical pulp. New tanks (l. to r.) (not new are accumulator and No. 3 blowtank at left center): Brown liquor storage, pink liquor storage, hot and cold water storage of recovery system, No. 3 blow tank, liquor measuring tanks. Hardwood barking-chipping plant (small structure at right) delivers chips to digester building housing 9 kraft digesters and three new digesters for NS or Kraft.
(Top right) Neutral Sulfite Washer Room addition to kraft washer building. Concrete tank, at left, for Weyerhaeuser's hi-density NS stock storage; filtrate tanks in left foreground. Recently installed kraft oxidation and foam towers at far right. Note size of two men in foreground, below.
(Lower left) New No. 4 Machine Room and covered shipping dock at Weyerhaeuser Longview plant.
(Lower right) Running NS Semi-chem corrugating medium on Beloit 165-in. machine inaugurating production at Weyerhaeuser Longview plant in late April.

West's First Neutral Sulfite Semi-Chem Plant

Pacific Coast alder "weeds" now useful, tied in with new Weyerhaeuser 165-in. Fourdrinier at Longview

● The Pulp Division of Weyerhaeuser Timber Co. added another process to its Longview, Wash. operations in late April when it inaugurated production of neutral sulfite semi-chemical pulp—the first west of Mississippi River—and the manufacture of 9-point corrugating medium. This latest addition further extends product diversification and forest product utilization at the 600-acre Weyerhaeuser industrial center.

The expansion pioneers volume usage of species heretofore generally considered commercially insignificant in the region. Production of corrugating medium relieves the division's Springfield, Ore., mill from producing lighter weight board products.

The objective of going to the NS process, according to Raymond E. Baker, recently named manager of manufacturing of pulp division, "is to better serve our box making customers by providing them the best grade 9-point possible."

LONGVIEW UP TO 1,000 TONS A DAY—This expansion increases rated capacity of Longview Pulp Division operations to about 1,000 tons per day. Previously the daily average production consisted of 300 tons bleached sulfite market pulp, 240 tons bleached kraft market pulp and 225 tons bleached kraft food-board. The NS addition, of 200 tons capacity, operates in conjunction with a modern, concurrently installed Beloit Fourdrinier machine rated at 300 tons.

Weyerhaeuser personnel concerned in planning the NS addition includes Mr. Baker; Construction Engineer Gerald Alcorn, in charge of design and engineering, and Research Director Harold Bialkowsky. E. N. Wennberg, Longview pulp division manager, heads up the operations staff.

Key production personnel includes J. C. Brown, formerly of Springfield plant and now assistant manager at Longview; A. H. Wickett, kraft mill superintendent; Raymond Erickson, recently promoted to paperboard superintendent; H. J. Leech, recently promoted to technical supt. paperboard; T. W. Stewart, power

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Once again, the Airveyor goes into service in the pulp and paper industry—this time in the 25 million dollar plant of the Buckeye Cellulose Corporation, Foley, Florida, subsidiary of the Procter & Gamble Company. This thoroughly modern plant has a capacity of 300 tons of dissolving cellulose pulp per day.

Incoming mill-supply chemicals are handled by two Airveyor conveying systems. One system unloads salt cake from box cars and delivers to a storage bin at rate of 10 tons an hour. The same system also conveys from a pulverizer discharge and delivers to a service bin in the recovery building. The second Airveyor unloads alum and pebble lime from either box or hopper-bottom cars and delivers to a storage bin at rate of eight tons an hour.

The pulp and paper industry has learned by experience that Fuller Company is able to engineer and build equipment that will serve them for many years, at the lowest operating and maintenance cost. This is attested to by the many satisfactory installations in operation. Individual company purchases range from one to as many as twelve systems.

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DRY MATERIAL CONVEYING SYSTEMS AND COOLERS . . . . PREHEATERS . . . . COMPRESSORS AND VACUUM PUMPS . . . . FEEDERS

plant superintendent; D. G. Felthous, plant engineer; LeRoy McTee, chief electrician; L. L. Anderson, master mechanic; Arthur E. Erickson, technical director and V. L. Mauerman, chip preparation superintendent.

BRINGS WESTERN ALDER INTO USE—By producing NS semi-chem corrugating medium several advantages are expected to accrue—to the Longview plant, the local community, the pulp division's other mills, to the entire Weyerhaeuser organization and its customers. Management's aim to produce top quality corrugating medium of high flat-crush and good runability played a dominant role in deciding on this process.

Besides, it furthers wood utilization through increasing yields from the usual 45-55% range to around 65 to 70%, and the region's supply of recognized commercial timber is extended by providing an important market for native hardwoods, particularly alder. These species, previously in extremely limited demand, make up about 75% of the wood used here in the NS process, thus effectively extending supplies of species which have long been commercially accepted.

Components of the NS semi-chemical additions have been so arranged in relation to the previously existing kraft mill that they can be used for making both kraft and NS pulp and board products. Except for storage tanks and tributary lines, nearly all facilities interconnect with the kraft system, thus making for efficiency and extremely versatile operations.

Brown NS liquor, blended with black kraft liquor, is concentrated and then burned in the existing kraft recovery furnace to recover chemicals. Leaving the recovery furnace, these NS kraft chemicals enter the kraft mill liquor system, taking the place of considerable saltcake make-up.

Equipment for Crossett's New Semi-chem Mill

Major equipment is being rushed for the new neutral sulfite semi-chemical process hardwood mill to be ready for operation by late 1955 at Crossett, Ark., by the Paper Mill Div., The Crossett Co. Pine kraft pulp from the existing mill will be blended with the hardwood to produce 150 tons of food container and similar board.

Beloit Iron Works will furnish a 216-in. wide 5-vat steam turbine driven cylinder machine. Stainless steel will be used extensively in the machine which will have forty-six 60-in. diameter 75-lb. steam pressure dryer rolls. Fan pump capacity will be 12,000 gpm.

Hardwood barking will be done with a 12 by 45 ft. Fibre Making Processes, Inc., drum, with a 96-in. chipper transferred from the pine mill. The pine mill will receive a new 104-in. Carthage Machine Co. chipper.

The Orville Simpson Co. will furnish the screens to which flow of chips will be regulated by a Link Belt Co. rotary feeder and conveyor. The Waterville Iron Works will furnish the hammermill type chip crusher for screen rejects. Builders-Providence, Inc., will furnish the weighing device for chips.

Chicago Bridge & Iron Co. will furnish a 3500 cu. ft. stainless clad digester to the hardwood and two 2800 carbon steel digesters to the pine kraft mill. Black liquor will be sent to the kraft mill to a new set of Swenson Evaporator Co. 140,000-lb. water per hour capacity evaporators. Digester blow valves will come from Paul Valve Corp.; Electric Steel Foundry Co. will furnish the digester strainer supports; Snyder Tank Corp., Birmingham, Ala., will build the tanks.

Warren Steam Pump Co., Inc., will furnish various types of pumps. Transfer pumps units will come from Sandy Hill Iron and Brass Works; belt material through Weaks Supply Co., Monroe, La.; pulp mill ventilating system from Ben J. Malone Co., Memphis, Tenn.

Improved Machinery, Inc., will furnish stainless steel, two-stage valveless type countercurrent washers for use both as brown stock washers and thickeners in pulp mill and bleach plant. Also furnished will be the blow tank agitator, bleach plant mechanical equipment, broke saveall, and poppet valves.

Bauer Bros. Co. will furnish refiners, screw feeders, drainer conveyor, and cleaners.

E. D. Jones & Sons Co. will supply a pulp master. Mathieson Chemical Co. will provide the ClO2 liquor making process.

Reliance Electric & Engineering Co. will furnish motors. Stock preparation equipment will come from Shartle Bros. Machine Co.

In the hardwood pulp mill, primary refining will be effected by a large double rotating disc refiner and treated again by a similar unit after washing. After secondary refining the stock will be passed through rotary screens, thence through Bauer cleaners to a thickener and to a 120-ton high density storage chest.

Bleach plant will have one low density chlorinization stage and three high density stages, for caustic, hypo, and chlorine dioxide. Pine kraft and hardwood pulp will be bleached separately to produce either low or high brightness, or high strength. High density storage will be provided for three pulp grades from the bleach plant.

In stock preparation high density stock will be pumped to tile-lined six-ton surge chests, thence to primary wide bar type refiners and then to conventional jordans. Afterwards either to a blending chest or either of three other tile chests and to the machine.

The mill will be well equipped with instruments for facile operator control.

New Union Bag Records

Union Bag & Paper's Savannah mill set new all-time pulp and paper production records in March. The paper mill made 56,464 tons off six kraft paper and board machines, a record high average of 1,821 tons daily.

The pulp mill set a record daily average of 1,895 tons. Lost time on the six machines averaged only 5 hrs. 47 min. per day, also a record. Daily box plant tonnage of 259 tons and daily tall oil tonnage of 110 tons were other new records for the month.

Thilmany Safety Record

Thilmany Pulp & Paper Co. went into the month of May with over 1,000,000 man-hours worked without a single disabling accident. This covers over 130 days. C. H. Kemp is safety director.

Investment in Learning

A Syracuse alum, WALTER B. MOREHOUSE, Assistant Vice Pres. of Nopco Chemicals, presents a $300 scholarship in behalf of the Pen-Jer-Del Supts. Division to DANIEL J. O'REARDON, pulp and paper technology senior at State University of Forestry, Syracuse.

K-300 UNLOADING PULPWOOD FASTER—operator works with greater speed and safety because of greater "live" weight built into every Link-Belt Speeder. All-welded, stress relieved construction gives greater strength per pound. Alloy cast-iron clutch shells assure superior friction, longer lining life. Independent rapid boom hoist has power control up *and* down.

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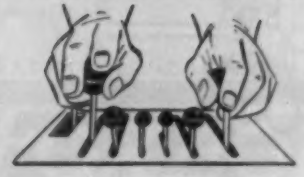

Today Speed-o-Matic controls are *standard equipment* on every size rig in the entire Link-Belt Speeder line! Full power hydraulic control is your key to 25% extra production . . . more consistent profits in the ½ to 3-yard, 6 to 60-ton work range. Here's why:

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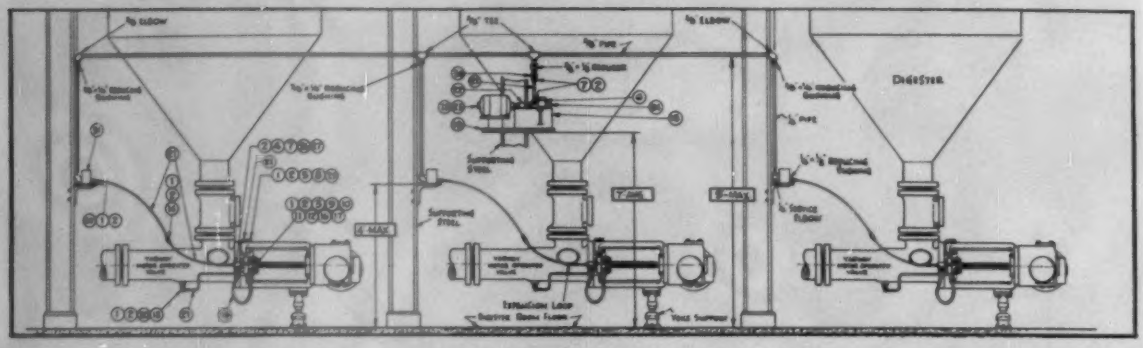

FIGURE 2—MATERIAL REQUIRED for 3 digester valves and multiple forced feed lubricator.

Pt. No.	Quan.	Name of Part	Pt. No.	Quan.	Name of Part	Pt. No.	Quan.	Name of Part	Pt. No.	Quan.	Name of Part
1	18	Compression nut	9	3	Elbow connector—30°	17	3	⅛" pipe nipple	24	1	Lubricator unit
2	32	Compression sleeve	10	3	Filler pin	18	1	Lubricator reservoir assembly	25	1	C-H 3 pole contactor
3	6	Self tapping screw	11	3	⅛" pipe strap				26	6	⅛" socket head cap screw
4	3	Junction 4-way single	12	3	⅛" 90° elbow	19	1	Lubricator base	27	6	⅛" lockwasher
5	3	Meter unit—type F	13	3	Meter unit—type F	20	1	2# angle check valve	28	18	Tubing clip
6	1	Oil specification plate	14	3	Coupling	21		5/32" od x .020 wall stl. tubing	29	3	Drip sleeve
7	14	Compression bushing	15	3	Hose assembly	22	1	H.A. thrush spring coupling	30	4	Straight adapter
8	3	Elbow connector—90°	16	3	Meter unit—type F	23	1	G-E ¼ hp motor	31	3	Solenoid valve

Notes: Quantities listed are for 3 digester valves only.

Lubricating Remotely Controlled Blow Valves

By FRANK PTACEK

● In some process industries and in certain uses in power plant work, there is need for a remotely controlled, power operated valve. The question of its regular lubrication arises since, as is known, a valve is best lubricated in the process of opening or closing and personnel to lubricate are not always in the required locale at that particular moment.

Figure 1 illustrates a plunger type valve which is popular in the paper and pulp industry for blowing down a digester charge. Since valve sizes range from 6 to 12 in., size dictates that they be power operated. The valve completes a cycle (open for blow and then shut tightly) about every 3 to 4 hours. The man controlling the valve is 3 to 4 stories above it and therefore, operation is remote.

The exact time for a blow is usually not known and for this reason it was felt important to develop a lubricator which would automatically provide metered lubrication of the correct oil, to the required places, at the proper time; thus, the man normally responsible for the lubrication would be free for other duties.

You will note in the illustration (in solid lines) an electric automatic lubricator. A motor drives a positive displacement pump. This motor is energized from the same push button station used to open and close the valve. When valve is opened, lubrication flows to three points; outside diameter of plunger, stem and plunger bushing, and through stop screw fitting to the lower packing ring and lower portion of plunger.

Valve operators are usually 440 or 550 volts, 60 cycles, 3 phase. The pump motor is usually of the same current characteristics. In wiring, the pump relay coil is placed between the valve reversing contactor and the operator so that coil will be energized when valve is either opened (for blowing) or closed (at completion of blow). Pump motor is running only during this short period.

ONE ASSEMBLY FOR GROUP OF VALVES—Where a group of 3 (or possibly 4) of these electrically operated valves are used (or multiple thereof) a design has been developed and in use whereby one motor, pump and reservoir assembly will suffice, with resultant decrease in cost. Such multiple use is predicated on relatively close spacing of the digesters and the fact that only one digester is blown

FRANK PTACEK, who describes here, especially for PULP & PAPER, a new digester installation used in pulp mills.

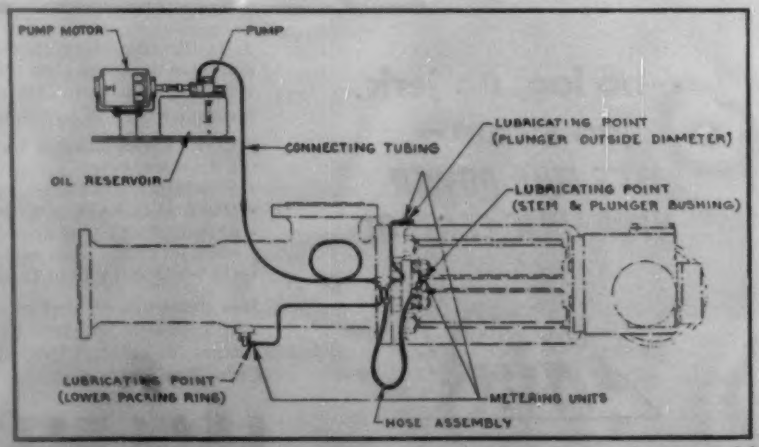

FIGURE 1—A PLUNGER TYPE VALVE for blowing down digester charge. In solid lines is electric automatic lubricator.

Mr. Ptacek is Manager of Engineering Sales, Yarnall-Waring Co., Philadelphia, Pa.

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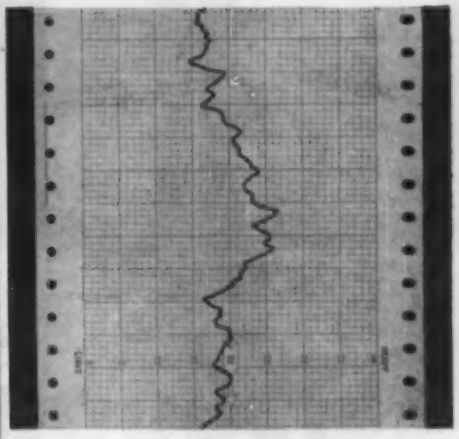

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Mill after mill is realizing major gains in paper quality through the use of the Foxboro Sheet Weight Profiler . . . a basic production tool which has never before been available. Send today for new literature: Bulletin PD-105-2 describes the Sheet Weight Profiler; Bulletin PD-108 describes Foxboro measurement and control of the entirely independent basis weight variable in the machine direction.

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at any given time; i.e. a given digester valve is open and shut with blow completed before another valve is opened. Figure 2 shows this installation.

The wiring for this is such that the pump is energized any time one of the 3 (or 4) digester valves is operated but a solenoid operated hydraulic valve located in the oil feed line of each digester valve is opened from the push button station of the particular digester, and thus only that particular valve is lubricated. Thus, oil is conserved and digester floor remains safe and clean.

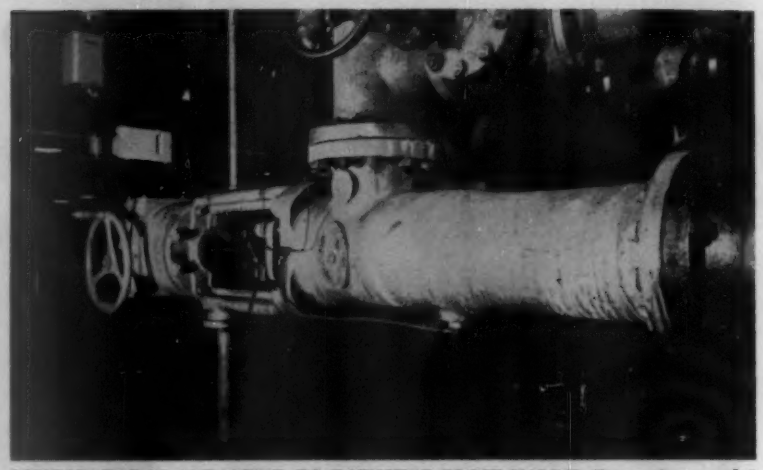
ONE-SHOT LUBRICATOR—Where the valve is hydraulic cylinder operated, and these are becoming increasingly popular for multiple installation, a semi-automatic "one shot" lubricator has been developed to lubricate the two positions; plunger outside diameter and lower packing ring, the latter through the body alemite fitting. Since piston rod is self-lubricated there is no need to apply oil from a lubricator such as this.

Thus, in a typical sequence the operator lifts the handle of the lubricator cocking it; he opens the digester valve using the correct hydraulic valve. Metered lubrication proceeds. At the completion of the blow the operator again cocks the lubricator and closes the digester valve. Thus it is lubricated in the process of opening and in closing.

With a minimum of operating costs it is possible to regularly lubricate the valve with the right grade of oil in a remote location.

The results in decreased maintenance alone have proven more than enough to offset the initial cost of such a lubrication unit, not to mention that a man, originally assigned to the job, is free for other more important duties.

Figure 3 shows an actual installation of a single electric automatic lubricator in a large Pacific Northwest pulp mill.



LUBRICATOR IS ATTACHED TO DIGESTER BLOW VALVE—Figure 3: one of 6 Yarway motor-operated seatless digester blow valves in one of the newer kraft pulp mills on the Pacific Coast. It is equipped with lubrication attachment.

Trees For Barren Aleutians Outpost

Adak—one of the small Aleutian islands—will be less barren because of Crown Zellerbach's "good neighbor, good forestry" program. Clarence Richen, CZ chief forester, presented 100 "high-altitude" Douglas fir seedlings to Lt. B. P. Winant, navy tug skipper to deliver to Adak.

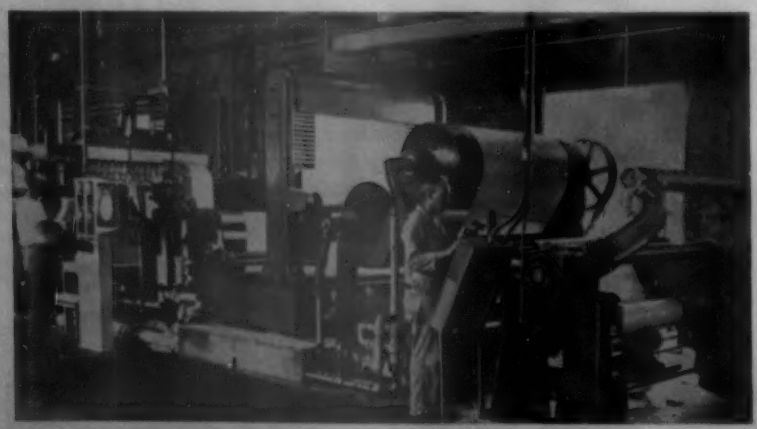
The seedlings will be added to the island's present 36-tree forest planted by servicemen during World War II. Miles Murray, of CZ industrial relations, expedited arrangements.

Joins Spencer Chemical

Mark B. Stringfellow has been named manager of market development at Spencer Chemical Co., a newly-created marketing position. He goes to Spencer from Nopco Chemical where he was manager of the plastics division.

He is a graduate of University of Texas in chemical engineering.

WALTER C. BLOOMQUIST, newly appointed Mgr. of Application Engineering, Atlantic District, General Electric Co., 1405 Locust St., Philadelphia, Pa. Moves there in June from Schenectady.



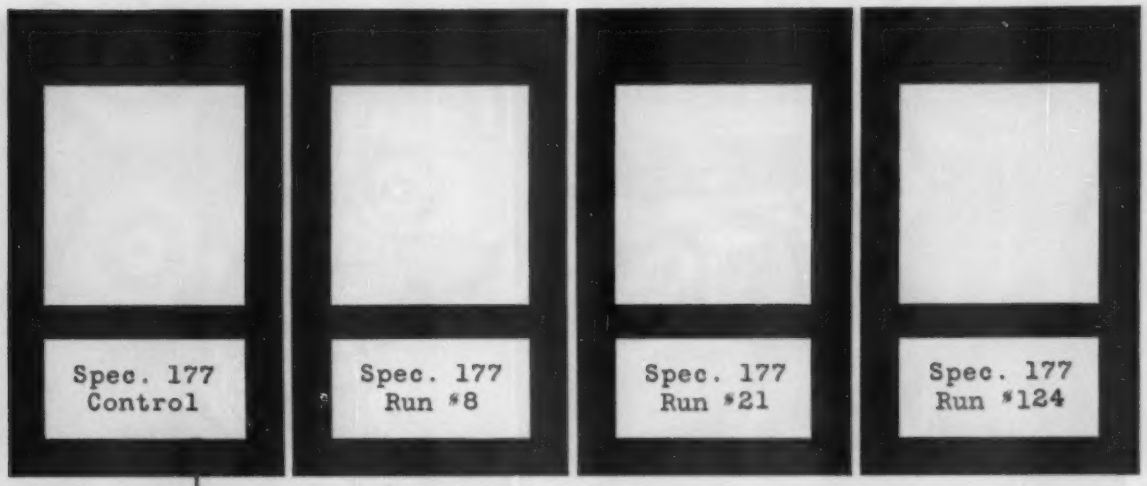
Dilts Waxer Installed at Potlatch Forests

This Dilts high-speed waxing machine, complete with continuous unwind and wind equipment, was recently installed at Potlatch Forests Inc., Pomona, Calif. It is capable of mechanical speeds up to 1500 fpm on webs 72 in. wide. It consists of Kohler System unwind with flying paster, a 3-roll waxing section, polishing rolls, water finish section, cold rolls, and Kohler System continuous winder with flying starter.

New Glassine Co. Directors Visit Mill Construction

R-W Paper Co., jointly owned by Rhinelander and Weyerhaeuser, held its stockholders meeting Apr. 28 in Tacoma, Wash. Following the meeting Pres. Folke Becker, chairman of Rhinelander, told PULP & PAPER that H. E. Nelson, treasurer of Weyerhaeuser, was named treasurer of R-W. He also announced election of James L. Buchanan, vice president of Chicago's First National Bank, to the board of directors replacing R. F. Nelson, who recently resigned as Rhinelander executive vice president.

Following the executive session Mr. Becker, with Directors B. R. Cancell, president of Rhinelander Paper, and Howard W. Morgan, vice president of Weyerhaeuser visited R-W's new glassine-greaseproof paper plant under construction at Longview.



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A competitively-priced board with a uniform, durable printing surface gets repeat orders. Eagle Brand Corn Starch assures you of an improved finish and a better printing surface, which will resist scuffing.

Paper men recommend Eagle Corn Starch (an acid-converted starch) for its ease of cooking, low cold water solubility and low viscosity.

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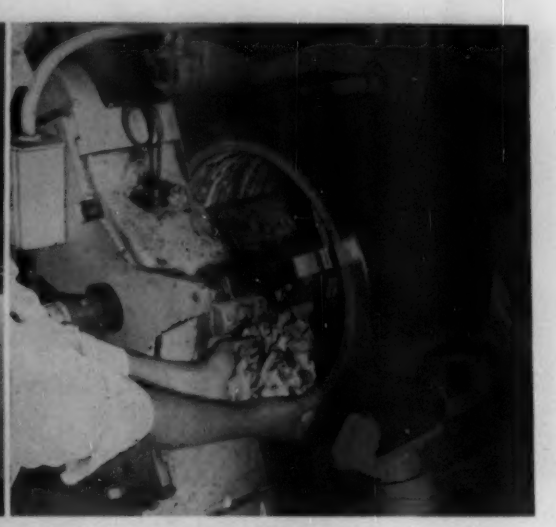
CORN STARCH

A Useful Pilot Digester

Tumbling digester and high pressure steam supply at Armour Research Foundation aid in research which is of value to pulp and paper industry. The digester temperature can be raised to 280°C in as little as 15 min. to simulate continuous digester conditions.



Reduces Semi-Chem HP Demand

Wood chips being hand fed to Stacomizer, a continuous rotary press of horn angle principle. In addition to being an excellent dewatering device, the press has proved effective in defibering semi-chemical chips, with resultant reductions in total refining hp.

How Armour Research Advances This Industry

Its work with new bleaching agent, coatings, in fields of pollution and corrosion holds much promise

By Dr. C. ROLAND McCULLY

Senior Scientist,
Armour Research Foundation

• As an industry, the manufacture of pulp and paper has enjoyed a 12-fold expansion during the last 50 years. A spokesman for the industry[1] tells us "all this has been brought about by the combined efforts of the man who dreams as well as the man who executes," yet "only 50 companies out of 500 in the industry have research staffs with 10 or more scientists," and "they are spending on research not more than 0.7 cents out of each sales dollar."

This situation, which at first glance may appear to be paradoxical, does much to explain the role that independent research organizations play in the research program of the industry. The industry's executives and research workers are unusually alert for new developments and since research staffs are relatively small outside assistance is quickly sought when skills beyond the usual scope of these research staffs are demanded.

[1] Allen Abrams, Vice President, Marathon Corp., Address to TAPPI, Feb., 1953.

Armour Research Foundation of Illinois Institute of Technology is one of the independent research organizations to which this industry turns for special assistance in solving old problems and developing new ideas. At the Foundation over 700 scientists and engineers undertake more than 400 new research projects a year. For these projects a concentration of varied experience and equipment is required since nearly all fields of research are represented. Here then is an available source of skills unusual to the pulp and paper industry as well as an additional source of usual skills.

PULPING AND STOCK PREPARA-

The Author—Now a Senior Scientist at Armour

This article, which reveals some unusual and promising studies made at Armour Research Foundation, for advancement of this industry, was written especially for PULP & PAPER.

Dr. C. Roland McCully, the author, has been active in forests products research since 1937. He was formerly with Weyerhaeuser Timber Co.'s pulp division and is now senior scientist at Armour Research Foundation of Illinois Institute of Technology. He works in the department of chemistry and chemical engineering, which is at 3329 So. Dearborn in Technology Center, Chicago (18).

Dr. McCully is a member of TAPPI and attended Paper Week this year. He received his ph.d. from the University of Oregon. He was doing research in analytical chemistry before joining Armour Research in 1951.

Although primarily a physical chemist, he is author of a textbook *The Theory of Flight Maneuvers*, and has two inventions. One is a device for conditioning dental amalgams. The other is a "remotecell," a portable polarographic cell used to analyze constituents of water at the bottom of lakes and rivers. He has done considerable work in atmospheric studies.

Dr. McCully, his wife, Barbara, and two sons, 9 and 5, live at 7730 West Talcott Rd., Chicago.

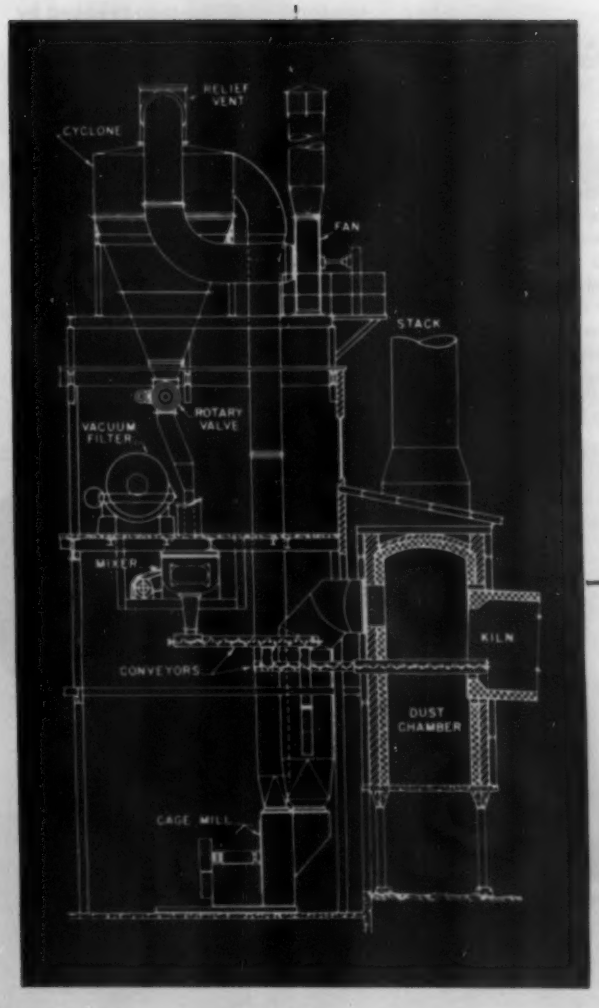
Question:

How much lime can a Kiln calcine?

Answer:

Much more than you probably think – when it's equipped with a C-E FLASH DRYING SYSTEM. For this effective "kiln-stretcher" can *increase kiln capacity by more than 50% – and can be installed around existing equipment in a surprisingly small space.*

Here's how it works. Lime mud is *pre-dried* before it enters the kiln – moisture content is reduced to zero. Thus, your overworked kiln, relieved of its drying function, can be used entirely for calcining.



And the C-E Flash Drying System cuts costs all down the line. First of all, recovery is more complete – you use far less make-up lime. And because the C-E System uses waste heat from the kiln, over-all fuel costs are reduced. In fact, C-E Flash Drying Systems now in service are cutting total fuel consumption to nine to ten million Btu per ton of lime.

It can do the same for you. For further information call your C-E representative, or, if you prefer, contact our Paper Mill Division in New York. 8-843

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COMBUSTION ENGINEERING

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200 Madison Avenue, New York 16, N. Y.

BOILERS, FUEL BURNING & RELATED EQUIPMENT; PULVERIZERS, AIR SEPARATORS & FLASH DRYING SYSTEMS; PRESSURE VESSELS; AUTOMATIC WATER HEATERS; SOIL PIPE

TION—Armour Research Foundation, as its name implies, is a research organization as distinguished from testing laboratories. At times we are asked to test new equipment, meaning really to do research on applications of the equipment. One such application involved the evaluation of the Stacomizer in wood pulp preparation. This interesting device is a continuous press of the horn angle type with which, when required, extreme pressure may be exerted. It has been used in dewatering such diverse materials as bark and cellulose acetate and, as the result of Foundation research, applications in improving starch as well as rubber for uses in the pulp and paper industry may be developed.

One attribute of the Stacomizer is that although a relatively low horsepower input is required, the production is high. This advantage led to the investigation of this device for defibration of hard-cooked chips in a joint program participated in by five pulp and paper companies and the U. S. Forest Products Laboratory. Results from this study show that the total defibrating and refining horsepower requirements for neutral sulfite semichemical poplar chips can be reduced to one half when the Stacomizer is used for the initial chip defibration. The quality of the finished 9-point corrugating stock is maintained by the proper combination of the Stacomizer treatment and conventional refining methods. Further, no dilution is required of the cooked chips during the Stacomizer treatment, and, instead, some 50% of the liquor remaining in the chips is directly expelled, thus furnishing an interesting basis for liquor recovery.

The Author—with Two Industry Notables

This is a picture taken by PULP & PAPER a few years ago when the author, DR. ROLAND McCULLY (middle), then with Weyerhaeuser Timber Co.'s Pulp Division, received a Pacific Coast TAPPI award for a prize paper. He is being congratulated by WILBUR F. GILLESPIE (right), Technical Director, Gaylord Container Corp., while BILL BARBER, former Central Research Director of Crown Zellerbach, looked on approvingly. Dr. McCully saw many old friends again when he attended New York Paper Week sessions this year.

The Stacomizer studies are typical of the type of problem handled by the pulp and paper group of the Chemical Engineering Section. Invariably, the work of this group involves operations that no other laboratory is equipped to handle.

NEW PULP BLEACHING AGENTS—Among the other contributions of the Chemical Engineering Section has been the development of new, more efficient, processes applicable for the production of certain oxidizing agents. Hitherto unknown purities have been obtained and drastic price reductions promised by these developments.

The pulp and paper group has carried out an extensive bleaching study with one of the agents. Results from this study have been very encouraging, but the confidential nature of the work permits us to say only that quality-wise, pulp bleached with the agent compares well with pulp prepared by the best chlorine-hypochlorite procedures. Very marked reductions in bleaching time and important equipment simplifications appear feasible.

Industries are not advised to abandon present bleaching practices yet, however, because the development of the manufacturing process for the new bleaching agent is just now approaching the pilot plant stage.

FINE PARTICLES RESEARCH—One very active Foundation Section that is unique among research laboratories is the Fine Particles Section. Although the work in this section is not confined to air polution and

Scientists Work to Solve Air Pollution—Advance Graphic Arts

(Left) Aerosoloscope at Armour Research Foundation, an electronic instrument for automatic counting and sizing of air-borne particulate matter. The large amount of accurate information that can be quickly gained with such equipment can lead to the solution of air pollution problems.

(Right) Research scientists test the Chem-Dry process, a rapid, chemical process for quickly setting many printing inks.

stream polution abatement, its specialties in aerosol handling and all types of filtration have proved attractive to industries with gaseous and liquid waste problems. A wide range of practical experience in equipment development and fume and dust elimination has been gained in such work.

The section has done basic research into the many factors involved in aerosols of the atmosphere and recently completed a field study aimed at disclosing the effects of precipitation on the atmosphere. In another type of development Fine Particle specialists who are thoroughly familiar with the problems of determining aerosol size distributions teamed with sections from the Electrical Engineering and Physics Departments to develop an automatic instrument that counts and determines the sizes of dust or smoke particles. With this instrument only minutes are required to accomplish a task that still means weeks of work by conventional methods.

Information gained by the use of such advanced analytical techniques together with the application of basic nucleation and other aerosol principles furnish the most direct solution to difficult problems of entrainment and smoke reduction, typical problems of the kraft mill recovery system.

RHEOLOGICAL STUDIES—A laboratory which should be of particular interest to the paper industry is the rheology laboratory in the Physical Chemistry Section. In this group, research is devoted to the study of the deformation and flow of matter.

Many industrially important materials are neither true liquids nor classical solids, but are more commonly classified as "gunks." Paper coatings and adhesives usually fall into this category. Since these materials do not obey Newton's law of viscous flow, special methods are required to evaluate their flow properties. Two types of non-Newtonian behavior may be encountered, (1) the apparent viscosity may depend on the speed of shearing and (2) in addition to this it may depend on the time of shearing (thixotropy).

These properties determine the performance of the coating material or adhesive in a coating machine or mixing equipment and the rheological measurements can be a very important tool in research or product control on these materials.

At the Foundation, the rheology laboratory has done research on a wide variety of industrially important products ranging from lubricating oils (particularly the flow behavior at low temperatures) to cosmetic products.

For Paper Coating Studies

Study of non-Newtonian flow behavior with the Precision Inter-Chemical Rotational Viscometer, one of three types of viscometers used in the rheology laboratories. Adhesives and paper coating materials frequently exhibit such behavior.

CORROSION PROBLEMS – Rapid corrosion of digesters used for alkaline pulping operations has become a serious problem with the industry. Varied approaches to this problem have been tried, among these the work of the TAPPI Engineering Committee participated in by the Foundation[2] is of particular interest. This study is typical of the Armour Plan where specialists from several fields contribute to research problems.

The problem involved is basically a statistical analysis of digester corrosion data. However, Foundation specialists in pulping, operations research, and computer operations were available as needed to consult or take part. The work of the computer center on this project reduced the computional time from man months to a matter of hours and minutes.

Programs of this type though successful in themselves do not always supply the complete answers needed by an industry. A more basic approach may be required and, for such, interest centers around corrosion groups in both the Chemistry Department and the Metals Department.

In the case of kraft digester corrosion the chemical composition and crystal structure of the thin protective scale often is of intense interest. Electron diffraction techniques coupled with advanced electrochemical practices such as polarography can solve such problems and also find the reactions responsible for the scale and corrosion. Polarography has proven to be a powerful tool in the study of black liquor; especially its lignin, sulfide and polysulfide content.

Other studies undertaken involve selection of corrosion inhibitors for use in various pulping and papermaking operations. In some cases these inhibitors must be compatible with paper stocks.

CONVERTING AND PACKAGING PROBLEMS—The converting and packaging branch of the industry has found the packaging of foods to be one of its most rapidly expanding fields. The demand is for gayer, brighter packages that will not adversely affect the palatability of the foods stored therein, yet are durable and in some cases rodent repellent. For brighter printing the Chem-Dry process developed at the Foundation is of interest. Rapid drying of vehicles is promoted by this process thus allowing greater printing speeds without offset.

The application of organolyptic valuations to the problem of palatability of food products stored in or served in paper containers was previously described in PULP & PAPER, p. 82, Feb. 1954. An approach, perhaps unique at the Foundation, has been the successful application of container physical chemistry to show that palatability can often be affected when no objectionable flavors or odors

[2] A. Ungar and T. E. Caywood, Comparative Analysis of Digester Corrosion Measurements, TAPPI 37, 177-190, May 1954.

Facts About Armour Research and Illinois Institute

Illinois Institute of Technology, of which the Armour Research Foundation is an integral part, has the largest undergraduate and also the largest combined undergraduate and graduate enrollment of engineering students of any educational institution of North America. Total student body exceeds 7,000, of which over 5,500 are engineering students.

The Institute was founded in 1940, through merger of Armour Institute of Technology and Lewis Institute, both founded in the early 1890's.

Its home, and the home of Armour Research Foundation, is the 85 acre Technology Center a few blocks off Lake Michigan in South Chicago.

Illinois Institute has a $10,000,000 annual budget and assets of over $18,000,000. Its president, only 42 years old, is Dr. John T. Rettaliata. He is also president of Armour Research Foundation. (See his article on *Management Tools—Rules of Conduct*, PULP & PAPER Sept. 1953).

Illinois Institute has over 4,600 undergraduate engineering students. Purdue, Illinois, CCNY and Brooklyn Polytech are next, in that order, with over 3,000. Brooklyn Polytech and MIT, with over 1,000 each, lead in number of graduate engineers. Next are NYU and Illinois Institute, with over 900 each, and far ahead of the next school, Penn State, with less than 600.

are present in or on the paper product.

Another development at the Foundation are the hairless rats bred by the Biochemistry Section. Since no shaving is required they are admirably suited to the study of skin irritants and similar agents that may on occasion be placed in or on paper products to impart specific properties. These and other rats have also proved valuable in the study of rodent repellents, another problem of great interest to food packagers.

A wide variety of interesting problems can be cited from the records of the eight research departments at the Foundation. The design of mechanisms for automatic packaging, wear of folding box equipment, refractory linings, heat transfer studies, and the felting of filter cartridges and furniture assemblies are all within the experience of these departments. One or more phases of research at the Foundation prove to be of interest to nearly all visitors from the pulp and paper industry. It is seldom possible to predict the phases of most interest in advance though it is likely they will be in fields other than those usual to pulp and paper research. The industry has long recognized that such problems may be more expediently solved by an independent research organization. Hence the visit, and perhaps, discussions that may point the way to the solution to still another problem of the pulp and paper industry.

New Lift Truck

Giving more visibility to lift truck drivers is this new Hyster Monomast, designed with one mast. Thousands of hours of job tests indicate the Monomast will work faster than comparable conventional units, says Hyster. The new unit allows the operator a clear, unobstructed view to both forks and load, permitting faster operating speed and reducing driver fatigue. Total weight upright is about the same as standard assemblies, but its tubular design is acknowledged to be even stronger than comparable models.

Catalogs and specifications can be obtained from dealers or from Hyster Co.

PULP & PAPER

What's New in Canada's No. 1 Industry

HIRES A "RAIN-MAKER"—Possibly the first instance of a forest industry company hiring a "rain-maker" is Powell River Co.'s engagement of Water Resources Development Corp. of Denver, Colo., to "seed" rain clouds over specific target areas along the British Columbia coast. Particles of silver-iodide are projected into the sky by "generators." The same type of chemical is used in "cloud-seeding" from aircraft. Purpose is to insure sufficient water for Powell River's big newsprint mill. Generating stations have been installed at points on Vancouver Island such as Ladysmith, Duncan, Campbell River, Comox and Wellington, although the objective is to direct rainfall eastward on the mainland.

NEW BOWATERS COMPANY—A new company has been formed to operate the hydro-electric development at present owned by Bowater's Newfoundland Pulp & Paper Mills and acquire the undeveloped water power rights held by that company. The assets are appraised at $34,000,000. Sir Eric Vansittart Bowater will be president. Demand for electrical energy in Newfoundland has been rapidly increasing.

SALES RECORD—MacMillan & Bloedel's total sales last year were $141,792,000, compared with $127,492,956 the previous year, and H. R. MacMillan, chairman, says that the increase was due almost entirely to a larger volume of sales of pulp, as average prices, particularly in lumber, were lower. Mr. MacMillan points out that the company's pulp mills at Port Alberni and Harmac have been giving an optimum performance and that the market has absorbed everything produced, with average prices being well maintained. However, new competition is entering the world market, and this is important because MacMillan & Bloedel sells 97% of its output outside Canada, in 25 different countries. The company produced 278,340 tons of sulfate pulp last year—2% of the free world total.

ANOTHER GOOD YEAR—Decline in the premium on the Canadian dollar and reduction in federal income taxes for corporations, coupled with a continuing strong demand at firm prices, will make 1955 another prosperous year for the industry in Canada, according to analysts. One company president recently announced that the tax change alone will save his organization $400,000 a year. Effect of unfavorable exchange during the past year or so is indicated by the fact that this same company lost more than $1,000,000 on conversion of U.S. dollars, but the trend has recently been towards a cheaper Canadian dollar in terms of U.S. exchange.

BIG COS. INCREASE PROFITS—With the presentation of reports on the 1954 operations of major pulp and paper companies in Canada, it has been possible to make an analysis of the composite financial position. The companies used in the analysis are Abitibi, Price Bros., Bathurst, Consolidated, Howard Smith, Fraser, St. Lawrence and Powell River.

In terms of net profits 1954 was the best year since 1951, although considerably below results for that year and for 1950. The group increased its net profits by 15% over 1953, earnings rising from $51,500,000 to $59,100,000. Improvement in net profits was proportionately better than the increase in operating profits before depreciation and depletion.

MORE WOOD BEING CUT—Pulpwood harvesting has been appreciably stepped up in the woods of Eastern Canada, and it's expected that for the 12 months ending May 31 the total cut was 11.4 million cords, or 8% over the previous season's record. However, production was substantially less than the all-time high 1951-52 season when the harvest totalled 14,000,000 cords, resulting from an all-out effort to build up depleted stocks of the war period. By 1952-53 the pulpwood inventory was back to normal, but the size of the cut was reduced sharply—to 9,500,000 cords because of a decline in pulp and paper demand. Now, however, woods operations are on a more stabilized basis. An increasing number of camps are working the year round and the advent of machines has made it possible for the industry to keep production more readily in balance with demand.

OFF TO NEW ZEALAND—Four top technical advisors of Abitibi Power and Paper left Vancouver, British Columbia recently for New Zealand, to work for the new Tasman Pulp and Paper Co. T. O. Anderson, H. W. Temple, I. McGibbon, and J. Rennie will remain in the New Zealand several months.

PRESSURE FOR CELANESE MILL—Some business interests in the Arrow Lakes district of British Columbia are growing impatient over the delay in getting started on construction of the proposed Celgar Development Co. pulp mill, and a board of trade meeting at Grand Forks has urged that the company be required to guarantee early action as a condition of holding a forest management license.

Spokesmen for the company say that a pulp mill is definitely planned and that extensive forest surveys now under way are essential to such a project.

In Important Posts for Crown Z

FRANK A. DRUMB left, former Asst. Vice Pres. of the U.S. firm and former Mgr. at Camas, Wash., mill is new President of Canadian Western Lumber Co., CZ Canadian affiliate and major supplier of wood for CZ expansion at Duncan Bay, B.C. It is a leading Canadian timber company.

ROBERT J. FILBERG center, veteran Pres. of Canadian Western, becomes its Chairman.

JOHN M. FULTON right, assumes Mr. Drumb's former responsibilities as Crown Z's Corporate Representative at its important Portland, Ore., general offices. Mr. Fulton had been Director of Purchases for CZ since 1953. Before that he was Pres. of Pacific Coast Supply Co., a former CZ subsidiary. He continues his duties as Purchasing Director for the entire company.

FRANK N. YOUNGMAN, President of CZ Canada, is now Chairman of Canadian Western Executive Committee. G. H. GALLAWAY, Res. Mgr. of Camas Mill, took on additional duties, succeeding Mr. Drumb as a Director of Western Transportation and Waterways Terminals Cos., Portland, Ore., CZ subsidiaries.

Heading Up Foxboro Sales

C. C. FULLER (left), new Vice Pres. of The Foxboro Co., Foxboro, Mass., and H. O. EHRISMAN (right), new General Sales Mgr. Heading Field Sales is J. J. Burnett. Mr. Fuller heads a new Foxboro Sales Development Committee and Mr. Ehrisman chairmans a new Sales Policy Committee. The former has been with Foxboro since 1920 and Mr. Ehrisman, who specialized in control instruments for papermaking, since 1936.

It's Simpson Paper Company Now

Everett Pulp & Paper Co., Everett, Wash., has been renamed the Simpson Paper Co., according to D. F. McCall, vice president and general manager, reflecting the change in ownership in 1952.

Incorporated in 1891 as Puget Sound Pulp & Paper Co., with two paper machines, its name was changed in 1895 to Everett Pulp & Paper, and later was purchased from eastern capitalists by local owners. In 1926 a third paper machine was installed, and recently capacity was increased to 100 tons per day (see page 80, Aug. 1954 PULP & PAPER).

The owner, Simpson Timber Co., founded in 1895, operates a fiberboard plant in Shelton, Wash., and other wood product divisions in Shelton and McCleary, Wash., and Arcata, Calif.

To Head Alan Wood Steel

Harleston R. Wood will become the fifth member of his family to assume the presidency of Alan Wood Steel Co. on Aug. 1. A graduate of Princeton, he joined the company in 1938. He succeeds John T. Whiting, who continues as chairman.

Mr. Wood was v. p. in charge of planning and development. He was a lieutenant in the navy in WW II, serving 4 years.

FOA Procurement Aid

Harold Stassen's FOA has authorized $2,425,000 to Egypt to purchase newsprint for delivery by Feb. 29, 1956.

His office allotted $710,000 to Korea for pulp and paper including newsprint and paper products for delivery by same date. It authorized $500,000 to Thailand, $20,000 to Turkey, for pulp and paper.

EQUIPMENT AND SUPPLY NEWS

LINDSAY WIRE WEAVING CO. of Cleveland has purchased a 35-acre site in Mentor, O. 20 miles from Cleveland, for a 45,000 sq. ft. plant to supplement present full-scale production at Lindsay's two plants on East 140th St., Cleveland. At least 20 wire-weaving looms, built by Lindsay's own force, will be accommodated. Lindsay's entire output goes to manufacturers of paper.

WEST END CHEMICAL CO. will start producing salt cake and anhydrous sodium sulfate by mid-summer, 1955. It will be extracted from the natural brine deposits at Searles Lake, Calif. and processed by special equipment, including a new evaporator, designed and patented by H. D. Hellmers, vice president, and J. V. Wiseman, research director. Initial production will be 50,000 tons annually.

SCAPA DRYERS, INC., a new American company, is building a plant in Waycross, Ga., to produce specialized types of cotton and asbstos dryer felts for the paper industry. It is sponsored by Scapa Dryers, Ltd., of Blackburn, England in association with Ayers, Ltd., of LaChute, P.Q., Canada. Thomas Hindle, managing director of the English company is president; Donald M. Brass will be in charge of production and service. Morey Paper Mill Supply Co., Fitchburg, Mass., will handle sales.

BECCO CHEMICAL has published Bulletin No. 66 for research development personnel, entitled "Becco Laboratory Procedures for Pulp Bleaching" (peroxide process). A free copy may be obtained from Becco Chemical Div., Food Machinery and Chemical Corp., Buffalo 7, N.Y.

OVERLY'S, Inc., Box 263, Neenah, Wis., offers a Vee Grip Stock-pipe Flange cast from lightweight, high strength ductile iron with stainless connections for hinge and threaded rod. It offers quick assembly, perfect alignment and gives good pipe support at joint so that no buckling occurs. It aligns the joint so that smooth flow of stock is insured, Overly's says, and makes cleaning out the stock lines a simple chore. The hand-wheel forms a cap over the bolt so threads are never jammed. Costs no more than ordinary back-up flanges.

WARREN STEAM PUMP CO., Warren, Mass., offers revised Stock Pump Bulletins 231, 235 and 243 covering a wide range of stock pumps for pulp and paper mill services, including machine and jordan chest. Specifications, sectional views with features and dimension are some of the engineering information given.

SIGNODE STEEL STRAPPING CO., Chicago, Ill., has acquired patents and licensing agreements of Addison-Semmes Corp., Racine, Wis., for the manufacture of expendable fibreboard pallets.

COCHRANE CORP., Philadelphia, Pa., announces the availability to industry for the first time, of Standard "Low Silica" Solutions for use with silica removal demineralizing systems. Ask for publication 5812.

RELIANCE ELECTRIC & ENGINEERING CO. has developed a new Corrosion-Proof a-c motor, the only motor, they say, for application in all industries which have inherent corrosive conditions.

New Giant Grinder at Manhattan's Neenah Plant

The year-old plant of Manhattan Rubber at Neenah, Wis., now boasts this huge two-wheel grinder, especially designed to grind calender rolls of chilled iron, steel, brass, gunmetal, chromium, granite and wood. Installation of this equipment is in line with the company's plan to provide most modern equipment and methods for covering and regrinding rubber covered rolls and grinding all types of calender rolls. Grinders will now handle the largest paper rolls used in this country.

Hough Co. Offers New Materials Handling Machines

The Frank G. Hough Co. announces two entirely different four-wheel drive models to its line of "Payloader" tractor shovels. They are model HU with one cu. yd. capacity and HH with 1¼ cu. yd. capacity. One outstanding feature of these new models is the design which permits 40° "breakout" at ground level rather than at 3 or 4 ft. "carry position."

Another Hough product, "the Switcher," is designed for railroad car spotting and is capable of spotting several railroad cars at once. This rubber tired 4-wheel-drive machine has 16,000 lb. drawbar capacity, torque converter, power steering, cat walk for switchmen, 4 wheel vacuum brakes and railcar couplings can be attached to front or rear. For further information contact Frank G. Hough Co., 891 7th St., Libertyville, Ill.

JOHN WILFERT CO., 488 Bushwick Ave., Brooklyn, N.Y. has been appointed as authorized distributors for Cooper Alloy valves, fittings and accessories according to distribution manager, C. L. Heintz.

THE OILGEAR CO. introduces its Oilgearducers which combine Oilgear fluid power, constant displacement, axial piston motors and Falk all-steel reducers into integral "Any-Speed" output units. Write to Oilgear Co., Milwaukee 4, Wis.

MILTON ROY CO. has issued Data Sheet F-55-5, "Solving Low Capacity Flow Control Problems in Paper Pulp Bleaching," which discusses the use of controlled volume pumps in the four major bleach processes: direct chlorination, hypochlorination, peroxide bleaching and chlorine dioxide bleaching. Copies from Milton Roy Co., Station G, 1300 E. Mermaid Lane, Philadelphia 18, Pa.

ATLAS MINERAL PRODUCTS CO., Mertztown, Pa., has a bulletin on rigid plastic fabrications and pipe. It outlines use of Type I polyvinyl chloride in fabrication and also includes data on plastic pipe and fittings.

J. E. RHOADS & SONS has moved its main office to 2100 W. 11th St., Wilmington 99, Dela.

PATTON MANUFACTURING CO., Springfield, O. is announcing the "Plasticart," a new light weight broke cart for either wet or dry broke. Is constructed out of strong, durable Fiberglas.

Gottesman's Sigel Retires

Arthur J. Sigel, vice president, Gottesman & Co., Inc., retired from the company on May 31, according to D. Samuel Gottesman, president. He will continue as a consultant with the company.

Mr. Sigel joined Mr. Gottesman in 1908 and has been associated with him ever since, having been elected vice president in 1926.

Mr. Sigel will devote his major time to hobbies, foremost of which is the reproduction of Early American antique furniture at his Long Island home. He has recently returned from a tour of South America with Mrs. Sigel and looks forward to further world travel with her.

ARTHUR J. SIGEL, Vice President, Gottesman & Co., Inc. recently retired according to D. SAMUEL GOTTESMAN, President. He will continue with the company as a consultant.

Wanted: Project Chemist or Engineer

The long range expansion program of an integrated board, carton and container manufacturer provides opportunity to the young chemist or engineer seeking a career in production supervision.

Indoctrination and training for eventual supervision will be handled on a special project basis in laboratory and mill scale experimental work for process improvement.

Address reply to J. A. Connolly, P.O. Box 3611, San Francisco 6, Calif.

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Confidential, rapid and professional service for nationwide placement in the Paper field. Write giving age, education and previous experience. Employers, send us job description. We will let you know how we can help you, by return mail. Graebner's Paper Exchange, "The Nation's Largest," 116 S. Michigan, Chicago 3, Illinois.

COATING CHEMIST

Excellent opportunity for graduate chemist or chemical engineer with experience in clay coating of enamel and machine coated printing papers. Must be capable of organizing plant scale development work. Location: Mid-West. Box 225, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

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The new kraft linerboard mill now under construction by WESTERN KRAFT CORPORATION near Albany, Oregon, will require experienced foremen, operators and technical personnel. The Mill is expected to start operation in early fall. Written applications giving full details of training and experience are invited from qualified persons. Address replies to: WESTERN KRAFT CORPORATION, American Bank Building, Portland 5, Oregon.

Wanted Engineers

Mechanical engineers and draftsmen experienced in automatic machine design, structural and general engineering including electrical for Southern industry. Pulp or paper mill experience helpful but not necessary. Give details regarding training, experience and salary in first letter. Box 224, PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

NATIONAL ALUMINATE CORP., Chicago, recently announced advancement of former assistant vice presidents, **H. R. POWERS, GAGE AVERILL** and **ALPHONSO CANTALINE**, each to post of vice president. Mr. Powers will be in charge of their industrial division sales, Mr. Averill catalyst sales, and Mr. Cantaline is European manager, based in Rome. Other Nalco promotions are **H. E. BERG, W. H. THOMPSON**, and **A. O. JAROS** to assistant vice presidents.

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